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UNITED STATES DEPARTMENT OF AGRICULTURE



DEPARTMENT BULLETIN No. 1366



Washington, D. C.

April, 1926

CHECK LIST OF DISEASES OF ECONOMIC PLANTS IN THE UNITED STATES

By

PAUL J. ANDERSON, Pathologist in Charge, Connecticut Tobacco Experiment Station, and temporarily Associate Pathologist, Plant-Disease Survey; ROYAL J. HASKELL, Associate Pathologist in Charge of Plant-Disease Survey; WALTER C. MUENSCHER, Assistant Professor of Economic Botany, New York State College of Agriculture, and temporarily Associate Botanist, Plant-Disease Survey, and CLARA J. WELD, Assistant Pathologist, JESSIE I. WOOD, Junior Pathologist, and G. HAMILTON MARTIN, Assistant Pathologist, Office of Plant-Disease Survey and Pathological Collections
Bureau of Plant Industry

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By PAUL J. ANDERSON, *Pathologist in Charge, Connecticut Tobacco Experiment Station*, and temporarily *Associate Pathologist, Plant-Disease Survey*; ROYAL J. HASKELL, *Associate Pathologist in Charge of Plant-Disease Survey*; WALTER C. MUENSCHER, *Assistant Professor of Economic Botany, New York State College of Agriculture*, and temporarily *Associate Botanist, Plant-Disease Survey*; and CLARA J. WELD, *Assistant Pathologist*, JESSIE I. WOOD, *Junior Pathologist*, and G. HAMILTON MARTIN, *Assistant Pathologist, Office of Plant-Disease Survey and Pathological Collections, Bureau of Plant Industry*

For a list pub. in 1950, see 1.965-1125p3 no.1

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The Office of Plant-Disease Survey and Pathological Collections has been collecting specimens and data regarding the occurrence and distribution of plant diseases in the United States for a number of years, but no attempt has heretofore been made to prepare a list of all the known diseases of economic importance in this country with their distribution. It is believed that such a list will be of great value to pathologists and others interested in plant diseases and their control, as it will provide a means of determining quickly and easily what diseases have been reported on our important economic plants and their present known distribution, with the name of the causal organism in the case of parasitic diseases and the common name of the disease. It is hoped also that the list will be helpful in bringing about greater uniformity and certainty in the use of both common and scientific names.

The list has been compiled from the office records, and much information and assistance have been given by members of the various pathological offices of the Bureau of Plant Industry and by some of the Plant-Disease Survey collaborators, to all of whom thanks are tendered.

BASIS AND SCOPE OF THE LIST

The data on which this list is based have come chiefly from four sources: (1) Reports of the Plant-Disease Survey collaborators in the different States, (2) specimens preserved in the Pathological Collections of the Bureau of Plant Industry, (3) the literature on plant pathology and mycology, and (4) the investigations of many specialists who have supplied information. The reports of collaborators have been used principally in the work on the geographic range of the various diseases. It will be seen at a glance that much more information is needed on this subject, and it is hoped that all who are in a position to add to our records will send reports with specimens. The records on specimens in the Pathological Collections have been used to obtain data regarding distribution. It has not been possible to verify the determinations of the fungi found in the herbarium, but all concerning which there was obvious doubt have been omitted. The material, however, is available for examination at any time in case question should arise regarding it. Records from the literature on the subject chiefly relate to additional information regarding the occurrence and geographic range of diseases.

The list is confined to the diseases of the principal economic plants of the United States, including most timber trees and many of the ornamentals. It has been the intention to include all economically important parasitic and nonparasitic diseases known to occur within the continental United States. The parasitic diseases are listed under each host alphabetically by causal organism. These are followed by the nonparasitic diseases and those for which no pathogen is known. These are indicated respectively by "nonpar." and "undet." Such troubles as winter injury, frost injury, and sun scald, which are liable to occur on any plant, have been omitted. There are no doubt other diseases in the literature which have been overlooked, and it is hoped that when such are observed they will be promptly reported.

It will be noted that the information concerning the geographic distribution of many diseases is obviously incomplete. It is hoped, however, that this preliminary list may stimulate more interest in the subject and lead all who have an opportunity to add to our information to do so. It is particularly important to have plant-disease material and specimens to verify the occurrence of new and little-known diseases from different localities.

HOST NAMES

The scientific and common names of the hosts included in this list are those used in Standardized Plant Names,¹ and no authority is cited in connection with these names. Occasionally, necessary exceptions which occur in the list are shown by the use of an asterisk.

The diseases of each host are listed separately whenever practicable, but no attempt has been made to separate the diseases of the varieties of the host species, except in a few cases where such varieties include rather distinct crop plants; for example, cabbage, cauliflower, kale, kohlrabi, etc., under *Brassica oleracea*.

¹ American Joint Committee on Horticultural Nomenclature. Standardized Plant Names. 546 pp Salem, Mass. 1923.

In some of the host genera, as, for example, *Quercus*, it has been impracticable to list the diseases for each species separately. In many genera, such as *Prunus* and *Rubus*, in which many of the records of our collaborators simply report a disease as occurring "on *Prunus*" or "on raspberry," it is not possible to give the particular species of the host; and in some genera the nomenclature of the species is so confused that it is almost impossible to determine what host the collaborator had in mind unless the authority for the species is given or a specimen supplied. For example, the name *Populus balsamifera* is sometimes applied to any one of a number of species of *Populus*. In some of the records the generic name of the host species only is given. In this connection it is desirable to urge upon collaborators the great importance of giving specific names of the host plants when sending reports and specimens, or accompanying the reports by specimens of the host as well as the fungus. This is essential in order that our records may be as complete and accurate as possible. The abbreviation "spp." after the generic name of a host means that all diseases reported on any species of the genus are listed and considered in recording the distribution of the diseases—for example, *Salix* spp. "Sp." after the generic name indicates that the diseases listed were reported largely on an undetermined or doubtfully determined species of the genus—for example, *Begonia* sp.

In certain host genera the diseases are listed separately for one or more of the common or important species, following which the diseases of all other species of the genus are grouped under "sp." or "spp." In such cases the diseases and their distribution do not necessarily include the diseases or distribution as listed under specific host species—for example, *Juniperus virginiana* and *Juniperus* spp.

NAMES OF PATHOGENS

As there is no general agreement at present among the mycologists and phytopathologists of the world in regard to the names of fungous parasites, it has been found necessary to adopt for the purposes of this list, as a rule, the names which are at present in most general use. For some large groups of parasitic fungi, of which more or less recent monographs are available and are largely used for reference by pathologists, it has seemed best to follow rather closely the nomenclature of such works.

Rusts.—The specific names of the rusts which appear in Volume VII of North American Flora have been adopted, except in a few cases where long usage has established a name so firmly that there seems to be no good reason for attempting to supplant it by another; for example, *Puccinia graminis* is used instead of *P. poculiformis* for the stem-rust of wheat and *P. coronata* instead of *P. rhamni* for the crown-rust of oats. Generic names of long standing and in general use, such as *Puccinia* and *Uromyces*, are also retained.

Smuts.—The names in this group are those of Clinton's monograph on the Ustilaginales in Volume VII of North American Flora.

Powdery mildews.—Salmon's monograph on the Erysiphaceæ in Volume 9 of the Memoirs of the Torrey Botanical Club has been followed in this group.

Downy mildews.—The papers of G. W. Wilson on the Peronosporales have been followed with the exception of the generic name

Rhizotheca, for which the common and well-established name *Plasmopara* is retained.

Polypores.—Of the wood-inhabiting polypores and other Hymenomyces, only those are included which are known to cause definite diseases or rots of living trees or timber and for which the symptoms have been described in pathological literature. Saprophytic species, or those whose economic importance has not been demonstrated, have been omitted. In the choice of names, the more common usage has been followed.

Bacteria.—The names used for the bacterial pathogens are those in most common use, as the bacteriologists apparently are not yet entirely agreed in regard to some recently proposed changes.

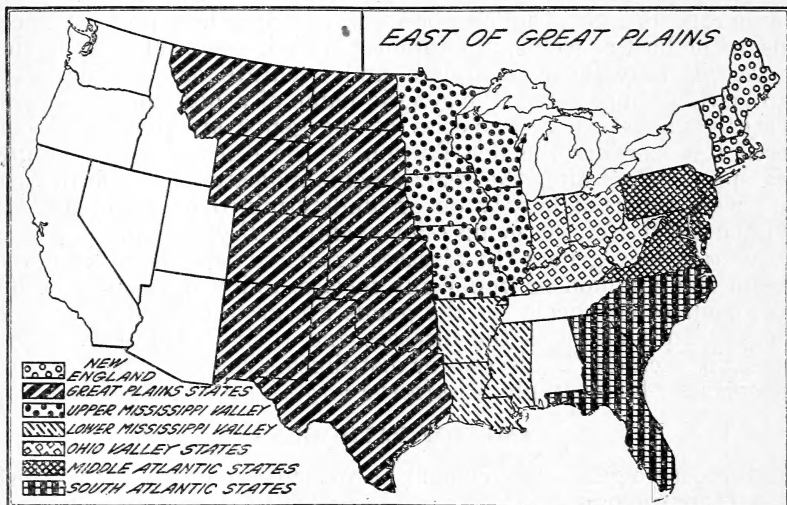


FIG. 1.—Geographic areas used in the list: New England, Great Plains States, upper Mississippi Valley, lower Mississippi Valley, Ohio Valley States, Middle Atlantic States, and South Atlantic States

Botrytis.—All pathogens of this genus, with a few exceptions, are here listed under the names *Botrytis* sp. or *Botrytis cinerea* Auct. It is probable that several distinct species are included under these names, but since there is no satisfactory basis now available for specific distinction, it seems best for present purposes to include all under these names, pending the appearance of a satisfactory revision of the genus.

Synonyms.—Synonyms are given in parentheses in certain pleomorphic species in which the perfect stage is known and in some other cases in which it seems desirable. In general, the name which has been applied to the perfect stage has been adopted.

COMMON NAMES OF DISEASES

The following principles, some of which have been adopted by the American Phytopathological Society,² have been used in selecting the common names in the present list. Many of these names have already been passed upon and approved by the society.

(1) First consideration has been given to names already in wide and general use.

(2) Names descriptive of symptoms have been selected where practicable.

(3) In general, the various diseases caused by a single organism on different hosts have been given the same common name.

(4) Many diseases which are not sufficiently well known or important to receive a descriptive name have been classed according to their major symptoms; for example, leaf-blight, root-rot, rust, and wilt.

(5) It is assumed that the generic name of the causal organism may be prefixed to such common names whenever it is deemed desirable. Such generic names have not, however, been repeated in this list.

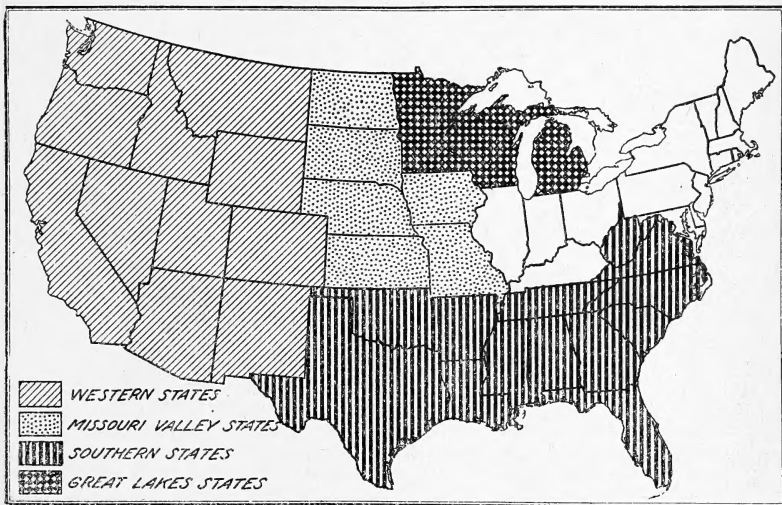


FIG. 2.—Geographic areas used in the list: Western States, Missouri Valley States, Southern States, and Great Lakes States

It is hoped that as many of these common names as prove convenient and satisfactory for practical purposes will be generally adopted, in order that they may become fixed and definite in their application and thus secure uniformity and stability.

DISTRIBUTION

An endeavor has been made to give in a brief form the geographic range of each species as correctly as the available information will permit. Diseases reported from a few or widely scattered States are followed by lists of these States. Diseases which have been reported from a number of States in which the host crop is grown or grows naturally are indicated as "general." Diseases which have been reported from a large number of States and in different parts of the country are indicated as "widespread." If a disease occurs

² Shear, C. L. Report of the seventh annual meeting of the American Phytopathological Society. *In* Phytopathology, vol. 6, pp. 211-212. 1916.

in one or more restricted regions, the range is indicated by listing the region. The following list gives the States included in each of the regions commonly mentioned. The accompanying maps (figs. 1 to 4) show the outlines of the various regions.

GEOGRAPHIC AREAS SPECIFIED IN THIS LIST, WITH ABBREVIATIONS

New England: Maine (Me.), New Hampshire (N. H.), Vermont (Vt.), Massachusetts (Mass.), Connecticut (Conn.), Rhode Island (R. I.).

Middle Atlantic States: New Jersey (N. J.), Pennsylvania (Pa.), Delaware (Del.), Maryland (Md.), Virginia (Va.).

South Atlantic States: North Carolina (N. C.), South Carolina (S. C.), Georgia (Ga.), Florida (Fla.).

Southern States: Virginia (Va.), North Carolina (N. C.), South Carolina (S. C.), West Virginia (W. Va.), Tennessee (Tenn.), Georgia (Ga.), Florida (Fla.), Alabama (Ala.), Mississippi (Miss.), Louisiana (La.), Arkansas (Ark.), Oklahoma (Okla.), Texas (Tex.).

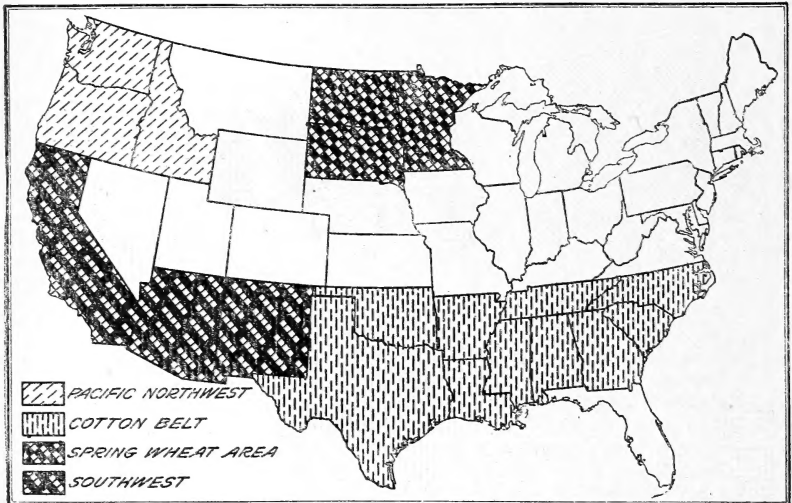


FIG. 3.—Geographic areas used in the list: Pacific Northwest, Cotton Belt, spring-wheat area, and the Southwest

Great Lakes States: Michigan (Mich.), Wisconsin (Wis.), Minnesota (Minn.).

Upper Mississippi Valley: Wisconsin (Wis.), Illinois (Ill.), Minnesota (Minn.), Iowa (Iowa), Missouri (Mo.).

Lower Mississippi Valley: Arkansas (Ark.), Mississippi (Miss.), Louisiana (La.).

Missouri Valley States: North Dakota (N. Dak.), South Dakota (S. Dak.), Nebraska (Nebr.), Iowa, Kansas (Kans.), Missouri (Mo.).

Ohio Valley States: Ohio, Indiana (Ind.), Kentucky (Ky.), West Virginia (W. Va.).

Middle West: Ohio, Indiana (Ind.), Illinois (Ill.), Michigan (Mich.), Wisconsin (Wis.), Minnesota (Minn.), Iowa, Missouri (Mo.), North Dakota (N. Dak.), South Dakota (S. Dak.), Nebraska (Nebr.), Kansas (Kans.).

Gulf States: Florida (Fla.), Alabama (Ala.), Mississippi (Miss.), Louisiana (La.), Texas (Tex.).

Great Plains States: North Dakota (N. Dak.), South Dakota (S. Dak.), Nebraska (Nebr.), Kansas (Kans.), Oklahoma (Okla.), Texas (Tex.), Montana (Mont.), Wyoming (Wyo.), Colorado (Colo.), New Mexico (N. Mex.).

Western States: Montana (Mont.), Wyoming (Wyo.), Colorado (Colo.), New Mexico, (N. Mex.), Idaho, Utah, Nevada (Nev.), Arizona (Ariz.), Washington (Wash.). Oregon (Oreg.), California (Calif.).

Rocky Mountain States:

Northern—Montana (Mont.), Wyoming (Wyo.), Idaho.

Southern—Colorado (Colo.), New Mexico (N. Mex.), Utah, Nevada (Nev.), Arizona (Ariz.).

Pacific coast: Washington (Wash.), Oregon (Oreg.), California (Calif.).

Pacific Northwest: Washington (Wash.), Oregon (Oreg.), Idaho.

Southwest: Arizona (Ariz.), New Mexico (N. Mex.), California (Calif.).

Cotton Belt: North Carolina (N. C.), South Carolina (S. C.), Georgia (Ga.), Alabama (Ala.), Tennessee (Tenn.), Mississippi (Miss.), Louisiana (La.), Oklahoma (Okla.), Arkansas (Ark.), Texas (Tex.).

Spring-wheat area: North Dakota (N. Dak.), South Dakota (S. Dak.), Minnesota (Minn.).

East of Great Plains: All States east of and including the eastern part of North Dakota (N. Dak.), South Dakota (S. Dak.), Kansas (Kans.), Oklahoma (Okla.), Texas (Tex.).

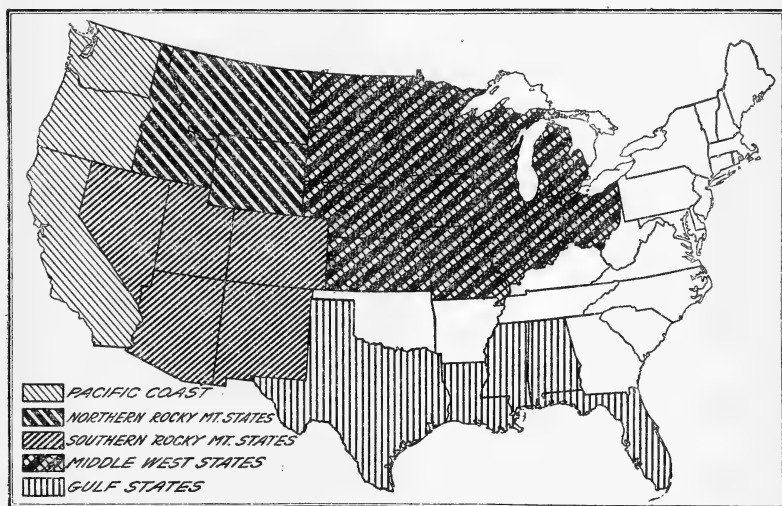


FIG. 4.—Geographic areas used in the list: Pacific coast, northern Rocky Mountain States, southern Rocky Mountain States, Middle Western States, and Gulf States

It is hoped that all who use this list will report any errors or omissions observed and will send specimens and records of any diseases not reported here or from regions not specified in this list, in order that later editions may be made more complete and accurate than this one.

C. L. SHEAR,
*Senior Pathologist in Charge of Plant-Disease
 Survey and Pathological Collections.*

LIST OF AUTHORITIES

The following is a complete list of the authorities used in the index, with the abbreviations of the names occurring most frequently:

Aderh. = R. Aderhold.	Anderson, H. W.
Alb. = Johannes Baptiste von Albertini.	Anderson, P. J.
Allesch. = Andreas Allescher.	Appel = O. Appel.
Alm. = J. V. d'Almeida.	Arcangeli, G.
Am. Auct. = of American authors.	Arn. = G. Arnaud.
	Arth. = J. C. Arthur.

- Arthur, John M.
 Atk. = George F. Atkinson.
 Auct. = of authors.
 Auer. = B. Auerswald.
 Baeumler, J. A.
 Bain, S. M.
 Bak. = A. L. Bakke.
 Barclay, A.
 Barss = H. P. Barss.
 Barth. = E. T. Bartholomew.
 Bast. = H. C. Bastian.
 Batsch = August Johann Batsch.
 Beckm. = Paul Beckmann.
 Bellyneck, A.
 Bereng. = A. de Berenger.
 Berk. = M. J. Berkeley.
 Berl. = A. N. Berlese.
 Bertero, C. G.
 Berth. = A. Berthold.
 Bessey, E. A.
 Bethel = E. G. Bethel.
 Biv. = A. de Bivona-Bernhardi.
 Bizz. = G. Bizzozero.
 Bjerck. = C. Bjerkander.
 Blox. = A. Bloxam.
 Bon. = H. F. Bonorden.
 Bonar, L.
 Bonquet, P. A.
 Bosc = Louis A. Guillaume Bosc.
 Br. = C. E. Broome.
 Braun = A. Braun.
 Braun, H.
 Brenckle = J. F. Brenckle.
 Bres. = Giacomo Bresadola.
 Briard, H.
 Briosi = G. Briosi.
 Brot. = Felix de Avellar Brotero.
 Brown, J. G.
 Brown, N. = Nellie A. Brown.
 Brun. = P. Brunaud.
 Bryan, M. K. = Mary K. Bryan.
 Bub. = F. Bubak.
 Bull. = Pierre Bulliard.
 Burk. = W. H. Burkholder.
 Burr. = T. J. Burrill.
 Butl. = E. J. Butler.
 Cam. = M. d'Souza da Camara.
 Carpenter, C. W.
 Carter, C. N.
 Casp. = R. Caspary.
 Cast. = L. Castagne.
 Catt. = A. Cattaneo.
 Cav. = Fridiano Cavara.
 Cda. = A. C. J. Corda.
 Ces. = Vincenzo Cesati.
 Charles, V. K.
 Chester = F. D. Chester.
 Chev. = F. Chevallier.
 Childs = Le Roy Childs.
 Chupp, C.
 Cke. = M. C. Cooke
 Clapp, G. L.
 Clausen, R. E.
 Clements, F. E.
 Clint. = G. P. Clinton.
 Cobb = N. A. Cobb.
 Coerper = Florence M. Coerper.
 Cohn = Ferdinand Julius Cohn.
 Colby, A. S.
 Com. S. A. B. = Committee of the Society of American Bacteriologists.
 Coons, G. H.
 Cordley, A. B.
 Coville = F. V. Coville.
 Crouan, P. L.
 Currey, F.
 Curt. = M. A. Curtis.
 Dan. = P. A. Dangeard.
 Dana, B. F.
 Davis = J. J. Davis.
 D By. = Anton de Bary.
 DC. = Augustin Pyramus de Candolle.
 Dearn. = John Dearness.
 Del. = G. Delacroix.
 DeLac. = l'Abbé S. de Lacroix.
 DeNot. = G. de Notaris.
 DeSeyn. = J. de Seynes.
 Desm. = J. B. H. J. Desmazieres.
 DeToni = G. B. de Toni.
 Died. = H. Diedicke.
 Diet. = P. Dietel.
 Dodge, B. O.
 Doidge = E. M. Doidge.
 Dorsett, P. H.
 Drechs. = Charles Drechsler.
 Duby = J. E. Duby.
 Dug. = B. M. Duggar.
 Dur. = Durieu de Maisonneuve.
 Durand, E. J.
 Earle = F. S. Earle.
 Eddy, E. D.
 Edg. = C. W. Edgerton.
 Edson, H. A.
 EFS. = Erwin F. Smith.
 Ehr. = C. G. Ehrenberg.
 Eidam = E. Eidam.
 Ell. = J. B. Ellis.
 Elliott, Charlotte.
 Elliott, J. A.
 Engelm. = George Engelmann.
 Enlows, = Ella M. A.
 Eriks. = J. Eriksson.
 Ev. = B. M. Everhart.
 Ezeziel, Walter N.
 Fairman = C. E. Fairman.
 Farl. = W. G. Farlow.
 Fautr. = F. Fautrey.
 Fawc. = H. S. Fawcett.
 Fekl. = L. Fuekel.
 Field, Ethel.
 Fisch. = A. Fischer von Waldheim.
 Fischer, Ed. = Eduard Fischer.
 Fitz. = H. M. Fitzpatrick.
 Foster, A. C.
 Fr. = Elias M. Fries.
 Frank, A. B.
 Fresen. = George Fresenius.
 Fromme, F. D.
 Frost, C. C.
 Gall. = B. T. Galloway.
 Gardner, M. W.
 Garovaglio, Santo.
 Gerard, W. R.
 Gidd. = N. J. Giddings.
 Gies. = Karl Giesenhagen.

- Gill. = Claude Casimir Gillet.
 Gloyer, W. O.
 Godfrey, G. H.
 Godkin, James.
 Goodding, Leslie N.
 Graves, A. H.
 Gray, S. F.
 Greef = R. Greef.
 Gregory, C. T.
 Griff. = David Griffiths.
 Griffin, F. L.
 Gross. = J. G. Grossenbacher.
 Grout, A. J.
 Gues. = H. T. Guessow.
 Hahn, G.
 Hall, J. G.
 Hall, van = Constant Johan Jacob van Hall.
 Hals. = Byron D. Halsted.
 Hanzawa, J.
 Hara, K.
 Hark. = H. W. Harkness.
 Harter = L. L. Harter.
 Hartig = Robert Hartig.
 Harz, C. O.
 Hasse = Clara Hasse.
 Heald = F. D. Heald.
 Hedge. = G. G. Hedgcock.
 Hedges = Florence Hedges.
 Hedw. f. = R. A. Hedwig.
 Hemmi, Takewo.
 Henn. = Ernst Henning.
 Henn., P. = Paul Hennings.
 Hesse = Rudolf Hesse.
 Hig. = B. B. Higgins.
 Hoehn. = F. von Hoehnel.
 Holw. = E. W. D. Holway.
 Hopkins, E. F.
 Hudson, William.
 Humph. = J. E. Humphrey.
 Hunt = N. Rex Hunt.
 Jaap, Otto.
 Jack. = H. S. Jackson.
 Jacq. = Nicholas Joseph Jacquin.
 Jacz. = Arthur de Jaczewski.
 Jagger, I. C.
 James, G. F.
 Jamieson, C.
 Jehle = R. A. Jehle.
 Jenkins, A.
 Jens. = J. L. Jensen.
 Johans. = C. J. Johanson.
 Johnson, A. G.
 Johnson, James.
 Johnson, T.
 Jones, F. R.
 Jones, L. R.
 Juel = H. O. Juel.
 Kab. = J. E. Kabat.
 Karst. = P. A. Karsten.
 Kauffman, C. H.
 Kell. = W. A. Kellerman.
 Kendrick, J. B.
 Kern = F. D. Kern.
 Khazanoff, A.
 King = Charlotte King.
 Kirchner, L.
 Kleb. = H. Klebahn.
 Klotzsch, J. F.
 Koern. = F. Koernicke.
 Krueger, W.
 Kuehn = J. Kuehn.
 Kuntze, O.
 Kze. = G. Kunze.
 Laf. = H. A. Lafferty.
 Lagh. = G. von Lagerheim.
 Lambert, C. R.
 Langlois, A. B.
 Lasch = W. G. Lasch.
 Leb. = Hermann Lebert.
 Lee, H. A.
 Leonian, L. H.
 Lévy. = J. H. Léveillé.
 Lewis, I. M.
 Lib. = Marie Anne Libert.
 Lindau = G. Lindau.
 Lindr. = J. I. Lindroth.
 Liro, J. I.
 Lk. = Heinrich Friedrich Link.
 Long = W. H. Long.
 Ludwig, C. A.
 Ludwig, F.
 Luedi, R.
 Lyon, H. L.
 Mackie, W. W.
 Magn. = P. Magnus.
 Mains, E. B.
 Manns, T. F.
 Marignoni, G. B.
 Mart. = George Martin.
 Martius, C. = C. F. P. von Martius
 Mass. = George Massee.
 Matz, J.
 Maub. = A. Maublanc.
 McAlp. = D. McAlpine.
 McC. = Lucia McCulloch.
 McClain, R. L.
 Meier, F.
 Meinecke, E. P.
 Melhus, I. E.
 Metcalf, H. A.
 Miles, L. E.
 Miyabe = Kingo Miyabe.
 Miyake = Tehiro Miyake.
 Molliard, M.
 Mont. = J. F. C. Montagne.
 Morgan, Andrew Price.
 Moug. = Jean Baptiste Mougeot.
 Muell. = C. Mueller.
 Munn, M. T.
 Murr. = W. A. Murrill.
 Murray, T. J.
 Nees = Christian Gottfried Nees von Esenbeck.
 Neg. = Friedrich Wilhelm Neger.
 Niessl = G. von Niessl.
 Nishida, T.
 Noack, F.
 Norton, J. B. S.
 Nutt. = Thomas Nuttall.
 O'Gara, P. J.
 Osner, George.
 Otth = G. H. Otth.
 Oud. = C. A. J. A. Oudemans.
 Overh. = L. O. Overholts.
 Pam. = L. H. Pammel.

- Pass. = Giovanni Passerini.
 Pat. = Narcisse Patouillard.
 Patterson, F. = Flora Wambaugh
 Patterson.
 Paxton, G. E.
 Pegl. = V. Pégliou.
 Penz. = O. Penzig.
 Perc. = C. Percival.
 Pers. = Christian Hendrik Persoon.
 Peterson, A.
 Peth. = G. H. Pethybridge.
 Petr. = Franz Petrak.
 Phill. = William Phillips.
 Pierce, Newton B.
 Piper = C. V. Piper.
 Pk. = C. H. Peck.
 Plow. = C. B. Plowright.
 Poit. = A. Poiteau.
 Poll. = Gino Pollacci.
 Porte, W. S.
 Posey = G. B. Posey.
 Preuss = C. G. T. Preuss.
 Prill. = Ed. Prilleaux.
 Pritchard, F. J.
 Quel. = Lucien Quélet.
 Rabh. = G. L. Rabenhorst.
 Raciborski, M.
 Ramsey, G. B.
 Rand, F. V.
 Rankin, W. H.
 Rav. = H. W. Ravenel.
 Ravaz = L. Ravaz.
 Reade, J. M.
 Reb. = J. F. Rebentisch.
 Reddick, D.
 Reddy, C. S.
 Regel, E.
 Rehm = H. Rehm.
 Reinke = Johannes Reinke.
 Ricker, P. L.
 Riess, H.
 Ritzema Bos, J.
 Rob. = M. Roberge.
 Roberts, J. W.
 Rose, D. H.
 Rosen, H. R.
 Rosenbaum, J.
 Rosendahl, C. O.
 Rostew. = S. I. Rostewzew.
 Rostr. = E. Rostrup.
 Roum. = C. Roumeguère.
 Roze = E. Roze.
 Rudolph, A. B.
 S. A. B. (Com.) = Committee of
 Society of American Bacteriologists.
 Sacc. = P. A. Saccardo.
 Sacc., D. = D. Saccardo.
 Sackett, W. G.
 Sadeb. = R. E. B. Sadebeck.
 Salm. = E. S. Salmon.
 Scalia, G.
 Schaeff. = J. C. Schaeffer.
 Schilb. = K. Schilbersky.
 Schl. = Diedrich Franz Leonhard von
 Schlechtendahl.
 Schm. = J. K. Schmidt.
 Schmidt, A.
 Schneider, A.
 Schrad. = Heinrich Adolph Schrader.
 Schrank = E. P. von Schrank.
 Schrenk = Hermann von Schrenk.
 Schroet. = J. Schroeter.
 Schultz, E. S.
 Schulz. = S. Schulzer von Muggen-
 burg.
 Schum. = Christian Friedrich Schu-
 macher.
 Schw. = Lewis David von Schweinitz.
 Scrib. = F. L. Scribner.
 Seaver = F. J. Seaver.
 Seym. = A. B. Seymour.
 Shaw, F. J. F.
 Shear = C. L. Shear.
 Sheld. = J. L. Sheldon.
 Sherb. = C. D. Sherbakoff.
 Sideris, C. P.
 Siegler, E. A.
 Slagg, C. M.
 Smith, C. O.
 Smith, E. H.
 Smith, R. E.
 Smith, W. G.
 Southworth, E. A.
 Sow. = J. Sowerby.
 Spauld. = Perley Spaulding.
 Speg. = C. Spegazzini.
 Stein. = J. G. Steinbuch.
 Stevens, F. L.
 Stewart, F. C.
 Stewart, V. B.
 Ston. = Bertha M. Stoneman.
 Stone, R. E.
 Sw. = Walter T. Swingle.
 Syd. = H. and P. Sydow.
 Tak. = Yoshiro Takahashi.
 Tassi, F.
 Taub. = J. J. Taubenhaus.
 Tehon, L. R.
 Tharp = B. C. Tharp.
 Thax. = Roland Thaxter.
 Thom, Ch.
 Thomas, F.
 Thomas, R. C.
 Thore, Jean.
 Thuem. = F. von Thuemen.
 Tiegh. = P. E. L. van Tieghem.
 Tisdale, W. B.
 Tode = Heinrich J. Tode.
 Town. = C. O. Townsend.
 Tr. = S. M. Tracy.
 Trel. = W. Trelease.
 Trev. = V. Trevisan.
 Tub. = Karl Freiherr von Tubeuf.
 Tul. = L. R. Tulasne or C. and L. R.
 Tulasne.
 Turconi, M.
 Underw. = Lucien Marcus Under-
 wood.
 Ung. = F. Unger.
 Vahl = Martin Vahl.
 Van Breda de Haan = J. van Breda de
 Haan.
 Van Hall = Constant Johan Jacob van
 Hall.
 Vester. = T. Vestergren.
 Viala = P. Viala.

Vogl. = P. Voglino.	Wils. = G. W. Wilson.
Waite, M. B.	Wilson, M.
Wakker, J. H.	Wingard, S. A.
Wallr. = Karl Friedrich Wilhelm Wallroth.	Wint. = G. Winter.
Weber, G. F.	Wolf = F. A. Wolf.
Wehmer, C.	Woll. = H. W. Wollenweber.
Weir = J. R. Weir.	Wor. = M. S. Woronin.
Welch, D. C.	Wormald, H.
Went, F. A.	Wrob. = A. Wroblewski.
West. = G. D. Westendorp.	Wulf. = Franz Xavier von Wulfen.
Wetts. = Richard von Wettstein.	Young, E.
Whet. = H. H. Whetzel.	Young, P. A.
Wilcox, E. M.	Zeller, S. M.
Williamson, M. M.	Zinssmeister, C. L.
	Zopf = Friederich Wilhelm Zopf.

LIST OF DISEASES

[An asterisk (*) shows that the name of the host given differs from that appearing in Standardized Plant Names; nonpar. = nonparasitic; undet. = undetermined.]

ABIES.

A. *amabilis*, cascade fir.

- Calyptospora columnaris* (Alb. and Schw.) Kuehn, leaf blister rust. Wash.
Dimerosporium sp., sooty mold. Wash.
Echinodontium tinctorium Ell. and Ev., brown stringy rot. Wash., Oreg.
Fomes annosus Fr., white spongy rot. Wash.
F. pinicola Fr., brown crumbly rot. General with host.
Hypoderma robustum Tub., needle cast. Oreg.
Hypodermella abietis-concoloris Dearn., needle cast. Oreg.
Melampsorella elatina (Alb. and Schw.) Arth.
Polyporus schweinitzii Fr., red-brown butt-rot. Oreg.
Pucciniastrum pustulatum (Pers.) Diet., leaf blister rust. Wash.
Razoumofskyia douglasii (Engelm.) Piper, mistletoe. Wash.
R. occidentalis abietina (Engelm.) Coville, mistletoe witches'-broom. Oreg.
Uredinopsis copelandii Syd., leaf blister rust. Wash., Oreg.
U. pteridis Diet. and Holw., rust. Wash.

A. *balsamea*, balsam fir.

- Calyptospora columnaris* (Alb. and Schw.) Kuehn, leaf blister rust. Northern States.
Fomes pinicola Fr., brown crumbly rot. N. Y.
F. roseus (Alb. and Schw.) Fr., brown pocket rot. General within range of host.
Lophodermium nervisequium (DC.) Rehm, needle cast. Adirondack region.
Melampsora americana Arth., rust. Vt., Mich., Wis.
Melampsorella elatina (Alb. and Schw.) Arth., rust witches'-broom. New England, N. Y., Lake States.
Nectria cucurbitula Fr., bark canker. N. Y., Pa.
Polyporus schweinitzii Fr., red-brown butt-rot. General with host.
Pucciniastrum pustulatum (Pers.) Diet., leaf blister rust. Wis., Mich.
Trametes pini (Brot.) Fr. (*Fomes pini* (Thore) Karst.), honeycomb rot. Common.
Uredinopsis sp. (*Peridermium balsameum* Pk.), leaf blister rust. N. H., N. Y., Pa., Wis., Minn., Wash.

A. *concolor*, white fir.

- Calyptospora columnaris* (Alb. and Schw.) Kuehn, leaf blister rust. Oreg., Calif.
Echinodontium tinctorium Ell. and Ev., brown stringy rot. Common in Western States.
Fomes officinalis Fr., reddish brown-rot. Western States.
F. pinicola Fr., brown crumbly rot. General in range of host.
Herpotrichia nigra Hartig, matting. Calif.
Hypodermella abietis-concoloris Dearn., needle cast. Colo., Oreg.
Lophodermium nervisequium (DC.) Rehm, needle cast. Oreg., Calif.
Melampsora americana Arth., rust. Colo.
Peridermium ornamentale Arth., rust. Oreg., Calif.

ABIES—Continued.

A. concolor, white fir—Continued.

- Phacidium infestans* Karst., needle blight. Idaho.
Polyporus schweinitzii Fr., red-brown butt-rot. General with host.
Pucciniastrum pustulatum (Pers.) Diet., rust. Colo.
Razoumofskya douglasii abietina (Engelm.) Piper, mistletoe. Ariz. to Oreg.
R. occidentalis abietina (Engelm.) Coville, mistletoe witches'-broom. Utah, Oreg., Calif.
Trametes pini (Brot.) Fr. (*Fomes pini* (Thore) Karst.), honeycomb rot. Calif.

A. grandis, great silver fir.

- Botrytis* sp., seedling twig-blight. Idaho.
Calyptospora columnaris (Alb. and Schw.) Kuehn, leaf blister rust. Mont.
Dimerosporium sp., sooty mold. Wash.
Echinodontium tinctorium Ell. and Ev., brown stringy rot. Mont., Idaho, Pacific coast.
Fomes officinalis Fr., reddish brown-rot. Idaho.
F. pinicola Fr., brown crumbly rot. Idaho, Wash.
Herpotrichia nigra Hartig, matting. Idaho.
Hydnum sp., hollow pocket rot. Idaho, Wash.
Lophodermium abietis Rostr., needle cast. Pacific Northwest.
L. nervisequium (DC.) Rehm, needle cast. Idaho.
Melampsora americana Arth., rust. Idaho, Wash., Oreg.
M. arctica Rostr., rust. Idaho, Mont.
Melampsorella elatina (Alb. and Schw.) Arth., rust witches'-broom. Pacific Northwest.
Peridermium rugosum Jack., rust. Wash., Oreg.
Phacidium infestans Karst., needle blight. Idaho.
Polyporus dryadeus (Pers.) Fr., heart-rot. Pacific Northwest.
P. schweinitzii Fr., red-brown butt-rot. General with host.
P. sulphureus (Bull.) Fr., brown-checked wood-rot.
Pucciniastrum pustulatum (Pers.) Diet., leaf blister rust. Idaho, Mont., Oreg., Wash.
Razoumofskya douglasii (Engelm.) Piper, mistletoe. Pacific coast, Idaho.
R. occidentalis abietina (Engelm.) Coville, mistletoe witches'-broom. Idaho, Oreg., Calif.
Rhizina inflata (Schaeff.) Sacc., seedling blight. Mont.
Uredinopsis copelandii Syd., leaf blister rust. Pacific Northwest.
U. pteridis Diet. and Holw., rust. Mont., Idaho, Wash., Oreg., Calif.

A. lasiocarpa, alpine fir.

- Calyptospora columnaris* (Alb. and Schw.) Kuehn, leaf blister rust. Idaho, Mont., Wyo., Colo., Oreg.
Echinodontium tinctorium Ell. and Ev., brown stringy rot. Mont.
Fomes pinicola Fr., brown crumbly rot. General within range of host.
Herpotrichia nigra Hartig, matting. Colo., Wyo., Idaho.
Melampsora americana Arth., rust. Wash.
M. arctica Rostr., rust. Idaho, Mont.
Melampsorella elatina (Alb. and Schw.) Arth., rust witches'-broom. Mont., Wyo., Utah.
Peridermium ornamentale Arth., rust. Oreg.
Phacidium infestans Karst., needle blight. Idaho.
Polyporus schweinitzii Fr., red-brown butt-rot.
Pucciniastrum pustulatum (Pers.) Diet., leaf blister rust. Mont., Oreg., Colo., Idaho, Alaska.
Razoumofskya douglasii (Engelm.) Piper, mistletoe. Colo., Mont.
R. laricis Piper, mistletoe witches'-broom. Mont.
Trametes pini (Brot.) Fr. (*Fomes pini* (Thore) Karst.), honeycomb rot. Common with host.
Uredinopsis copelandii Syd., leaf blister rust. Colo.

A. magnifica, red fir.

- Calyptospora columnaris* (Alb. and Schw.) Kuehn, leaf blister rust. Calif., Oreg.
Echinodontium tinctorium Ell. and Ev., brown stringy rot. Calif.
Fomes officinalis Fr., reddish brown-rot. Calif.
F. pinicola Fr., brown crumbly rot. General within range of host.

ABIES—Continued.*A. magnifica*, red fir—Continued.

- Herpotrichia nigra* Hartig, matting. Calif.
Lophodermium nervisequium (DC.) Rehm, needle cast. Calif.
Polyporus schweinitzii Fr., red-brown butt-rot. General with host.
P. sulphureus (Bull.) Fr., brown-checked wood-rot.
Razoumofskya douglasii (Engelm.) Piper, mistletoe. Calif.
R. occidentalis abietina (Engelm.) Coville, mistletoe witches'-broom. Oreg., Calif.
Trametes pini (Brot.) Fr. (*Fomes pini* (Thore) Karst.), honeycomb rot. Calif.

A. nobilis, noble fir.

- Echinodontium tinctorium* Ell. and Ev., brown stringy rot. Common in Western States.
Fomes pinicola Fr., brown crumbly rot. Common with host.
Hypoderma robustum Tub., needle cast. Oreg.
Hypodermella abietis-concoloris Dearn., needle cast. Oreg.
Polyporus schweinitzii Fr., red-brown butt-rot. General.
Pucciniastrum pustulatum (Pers.) Diet., rust. Oreg.
Razoumofskya douglasii (Engelm.) Piper, mistletoe. Wash.
R. occidentalis abietina (Engelm.) Coville, mistletoe witches'-broom. Oreg.
Trametes pini (Brot.) Fr. (*Fomes pini* (Thore) Karst.), honeycomb rot. Common within range of host.
Uredinopsis pteridis Diet. and Holw., rust. Oreg.

A. veitchii, Veitch fir.

- Fusicoccum abietinum* (Hartig) Prill. and Del. Ohio.

ACACIA.*A. farnesiana*, sweet acacia.

- Ravenelia australis* Diet. and Neg., rust. Tex.
R. siliquae Long, rust. Tex., N. Mex.

ACER.*A. circinatum*, vine maple.

- Cytospora chrysosperma* (Pers.) Fr., canker. Mont.
Nectria galligena Bres., European canker. Oreg.
Septoria aceris-macrophylli Pk., leaf-spot. Wash.
S. circinata Ell. and Ev., leaf-spot. Wash., Oreg.

A. dasycarpum, silver maple.

- Fomes fomentarius* (L.) Fr., white sapwood rot.
F. ignarius (L.) Fr., white heart-rot. Vt., N. Y.
Gloeosporium acerinum West., leaf-blight. Kans., Mo.
G. apocryptum Ell. and Ev., leaf-blight. N. J.
Pholiota adiposa Fr., wood-rot. Del.
Phoradendron flavescens (Pursh) Nutt., mistletoe. Ind.
Phyllactinia corylea (Pers.) Karst., powdery mildew. Wis.
Phyllosticta minima (Berk. and Curt.) Ell. and Ev., leaf-spot. General east of Great Plains.
P. minutissima Ell. and Ev., leaf-spot. Wis.
Polyporus delectans Pk. D. C.
Rhytisma acerinum (Pers.) Fr., tar-spot. General east of Great Plains.
Septogloeum acerinum (Pass.) Sacc., leaf-spot. Ala.
Septoria acerina Pk., leaf-spot. N. Y.
S. saccharina Ell. and Ev., leaf-spot. New England, N. Y., Wis.
S. salliae W. R. Gerard, leaf-spot. N. Y.
Taphrina sp., leaf blister. Mich.
Uncinula circinata Cke. and Pk., powdery mildew. General east of Great Plains.
Verticillium sp., wilt. Va.

A. glabrum, Rocky Mountain maple.

- Cylindrosporium consociatum* Dearn., leaf-spot. Pacific Northwest.
Cytospora chrysosperma (Pers.) Fr., canker. Mont., Pacific Northwest.
Fomes ignarius (L.) Fr., white heart-rot. Central States.
Phyllosticta minima (Berk. and Curt.) Ell. and Ev., leaf-spot. Rocky Mts. and Pacific Northwest.

ACER—Continued.

A. glabrum, Rocky Mountain maple—Continued.

- Septoria acerina* Pk., leaf-spot. Oreg.
S. circinata Ell. and Ev., leaf-spot. Colo., Calif.
S. saccharina Ell. and Ev., leaf-spot. Wash.

A. macrophyllum, Oregon maple.

- Cercospora aceris* Dearn. and Barth., leaf-spot. Wash., Oreg.
C. albopunctata Ell. and Ev., leaf-spot. Wash.
Fomes igniarius (L.) Fr., white heart-rot. Western States.
Nectria cinnabarina Fr., canker. Wash.
N. galligena Bres., European canker. Oreg.
Rhytisma acerinum (Pers.) Fr., tar-spot. Wash.
R. punctatum (Pers.) Fr., black-specked leaf-spot. Pacific coast.
Septoria aceris-macrophylli Pk., leaf-spot. Wash.
S. circinata Ell. and Ev., leaf-spot. Wash., Oreg.

A. negundo, boxelder.

- Cercospora negundinis* Ell. and Ev., leaf-spot. Nebr.
Cylindrosporium negundinis Ell. and Ev., leaf-spot. Nebr., Kans.
Fusarium negundi Sherb., red-stain. General with host.
Gloeosporium apocryptum Ell. and Ev., anthracnose. Wis., Ill., Kans., Okla.

G. negundinis Ell. and Ev., leaf-blight. Del., Tex.*Nectria cinnabarina* Fr., canker. Ohio, Minn., N. Dak.*Ozonium omnivorum* Shear (*Phymatotrichum omnivorum* (Shear) Dug.), root-rot. Tex.*Phleospora aceris* (Lib.) Sacc., leaf-spot. Calif.*Phyllosticta arida* Earle, leaf-spot. Ala.*P. minima* (Berk. and Curt.) Ell. and Ev., leaf-spot. Conn.*P. negundinis* Sacc. and Speg., leaf-spot. Me., R. I., W. Va., Ala.*Pleurotus ostreatus* Jacq., white line rot. N. Dak., S. Dak., Nebr.*P. ulmarius* Bull., white sap-rot. Iowa, Kans.*Polyporus squamosus* (Huds.) Fr., white strand-rot. Minn.*Rhytisma punctatum* (Pers.) Fr., black-specked leaf-spot. N. Y.*Septogloeum acerinum* (Pass.) Sacc., leaf-spot. Calif.*Septoria acerella* Sacc., leaf-spot. Mo., Mont.*S. marginata* Heald and Wolf, leaf-spot. Tex.*S. negundinis* Ell. and Ev., leaf-spot. Mass., Utah.*S. samarae* Pk., leaf-spot. Colo.*Sphaeropsis albescens* Ell. and Ev., twig-blight. S. Dak., Kans.*Stereum purpureum* Pers., silver leaf. S. Dak.*A. negundo californicum*, California boxelder.*Phleospora aceris* (Lib.) Sacc., leaf-spot. Calif.*P. californica* Ell. and Ev., leaf-spot. Calif.*Septoria marginata* Heald and Wolf, leaf-spot. Tex.*A. nigrum*, black maple.*Gloeosporium saccharinum* Ell. and Ev., leaf-blight. Iowa.*Rhytisma punctatum* (Pers.) Fr., black-specked leaf-spot. W. Va.*Taphrina* sp., leaf blister. Ohio.*A. palmatum*, Japanese maple.*Nectria cinnabarina* Fr., canker. Conn., Pa.*Pseudographium* sp., twig canker. Wash.*A. pennsylvanicum*, striped maple, *moosewood.*Fomes igniarius* (L.) Fr., white heart-rot. Vt., N. Y.*Gloeosporium acerinum* West., leaf-blight. Vt.*G. apocryptum* Ell. and Ev., anthracnose. Pa.*Phleospora aceris* (Lib.) Sacc., leaf-spot. Pa.*Phyllosticta minutissima* Ell. and Ev., leaf-spot. N. Y., Pa.*Rhytisma punctatum* (Pers.) Fr., tar-spot. W. Va.*Septoria acerina* Pk., leaf-spot. New England, N. Y., Pa.*Uncinula circinata* Cke. and Pk., powdery mildew. N. Y.*A. platanoides*, Norway maple.*Gloeosporium apocryptum* Ell. and Ev., anthracnose. Me., N. Y.*Microstroma* sp., leaf mildew. Ohio, Ill.

ACER—Continued.

A. *platanoides*, Norway maple—Continued.

Nectria cinnabarina Fr., canker. N. Y., N. J., Pa.

Phyllosticta minima (Berk. and Curt.) Ell. and Ev., leaf-spot. Va., Mo.

P. platanoides Sacc., leaf-spot. N. J.

Rhytisma acerinum (Pers.) Fr., tar-spot. N. Y.

Verticillium sp., wilt. General east of Miss. River.

A. *pseudoplatanus*, sycamore maple.

Phyllosticta minima (Berk. and Curt.) Ell. and Ev., leaf-spot. Conn.

Verticillium sp., wilt. Va.

A. *rubrum*, red maple.

Cytospora chrysosperma Fr., canker. Wash.

Fomes igniarius (L.) Fr., white heart-rot. Mich.

F. roseus (Alb. and Schw.) Fr., brown pocket rot. Md.

Gloeosporium aceris Cke., leaf-blight. S. C.

G. decolorans Ell. and Ev., leaf-blight. N. Y.

Nectria cinnabarina Fr., canker. Va.

Phleospora aceris (Lib.) Sacc., leaf-spot. Ind.

Phoradendron flavescens (Pursh) Nutt., mistletoe. Ind.

Phyllosticta minima (Berk. and Curt.) Ell. and Ev., leaf-spot. General east of Miss. River; Minn.

Rhytisma acerinum (Pers.) Fr., tar-spot. General east of Miss. River.

Taphrina sp., leaf blister. N. Y., N. C.

Uncinula circinata Cke. and Pk., powdery mildew. General east of Miss. River.

Verticillium sp., wilt. N. Y., Md., Va.

A. *saccharum*, sugar maple.

Armillaria mellea (Vahl) Quel., root-rot. N. Y.

Fomes applanatus (Pers.) Wallr. (*Ganoderma applanatum* (Pers.) Pat.), white streaked rot. N. Y.

F. fomentarius (L.) Fr., white sapwood rot. New England, N. Y.

F. igniarius (L.) Fr., white heart-rot. N. Y.

F. pinicola Fr., brown crumbly rot. N. Y.

Gloeosporium sp., leaf-blight. N. Y.

G. apocryptum Ell. and Ev., anthracnose. Pa.

G. hysterioideum Dearn. and Barth., leaf-blight. N. Y.

Hydnum septentrionale Fr., white sapwood rot. Mass.

Ozonium omnivorum Shear (*Phymatotrichum omnivorum* (Shear) Dug.), root-rot. Tex.

Phoradendron flavescens (Pursh) Nutt., mistletoe. Ind.

Phyllactinia corylea (Pers.) Karst., powdery mildew. Iowa.

Phyllosticta minima (Berk. and Curt.) Ell. and Ev., leaf-spot. Mass., Pa., Ind., Mo.

Polyporus sulphureus (Bull.) Fr., brown-checked wood-rot. N. Y.

Rhytisma punctatum (Pers.) Fr., tar-spot. Pa.

Taphrina sp., leaf blister. Me., N. H., N. Y., Pa., Ga., Ind., Mich., Mo.

Uncinula circinata Cke. and Pk., powdery mildew. N. Y., Ind., Iowa., Mo.

Verticillium sp., wilt. Conn. south to Va. and Tenn.

A. *spicatum*, mountain maple.

Fomes applanatus (Pers.) Wallr. (*Ganoderma applanatum* (Pers.) Pat.), white-streaked rot. N. Y.

F. igniarius (L.) Fr., white heart-rot. N. Y.

Phyllosticta minima (Berk. and Curt.) Ell. and Ev., leaf-spot. N. Y., Wis.

P. platanoides Sacc., leaf-spot. N. Y.

Rhytisma punctatum (Pers.) Fr., black-specked leaf-spot. New England, N. Y., Pa.

Septoria acerina Pk., leaf-spot. W. Va.

Uncinula circinata Cke. and Pk., powdery mildew. N. Y.

ACHRAS.

A. *sapota*, *sapote, sapodilla.

Pestalozzia scirrofaciens N. Brown, hard-gall. Fla.

ACONITUM.

Aconitum sp., monkshood

Erysiphe polygoni DC., powdery mildew. W. Va.

Urocystis sorosporioides Koern., smut. Utah.

Uromyces aconiti Fekl., rust. Colo., Utah, Calif.

AESCULUS.

A. californica, California buckeye.

Eoasacus aesculi (Ell. and Ev.) F. Patterson, witches'-broom. Calif.

Gloeosporium carpogenum Cke., leaf-blight. Calif.

Phoradendron villosum Nutt., mistletoe. Oreg., Calif.

Phyllactinia corylea (Pers.) Karst., powdery mildew. Calif.

Septoria aesculi (Lib.) West., leaf-spot. Calif.

A. glabra, Ohio buckeye.

Accidium aesculi Ell. and Kell., rust. Nebr., Kans.

Guignardia aesculi (Pk.) V. B. Stewart, leaf-blotch. Miss. Valley and Ohio Valley.

Phoradendron flavescens (Pursh) Nutt., mistletoe. Eastern States.

Phyllosticta aesculicola Sacc., leaf-spot. Va., Tex., Mo.

Septoria glabrae Ell. and Ev., leaf-spot. Ind.

Ucinula flexuosa Pk., powdery mildew. Miss. Valley and Ohio Valley.

A. hippocastanum, horsechestnut.

Botryosphaeria ribis Gross. and Dug., blight. N. Y., D. C.

Collybia velutipes Curt., white sap-rot. R. I.

Glomerella cingulata (Ston.) Spauld. and Schrenk, anthracnose. Conn., N. Y.

Guignardia aesculi (Pk.) V. B. Stewart, leaf-blotch. General, especially east of Rocky Mts.

Nectria cinnabarina Fr., coral spot. New England, N. Y.

Septoria sp., leaf-spot. Pa.

Ucinula flexuosa Pk., powdery mildew. Mass., N. Y., N. J., Del., Ind.

A. octandra, yellow buckeye.

Guignardia aesculi (Pk.) V. B. Stewart, leaf-blotch. Tex., Iowa.

Phyllosticta aesculicola Sacc., leaf-spot. Tex.

Ucinula flexuosa Pk., powdery mildew. Ala.

A. pavia, red buckeye.

Guignardia aesculi (Pk.) V. B. Stewart, leaf-blotch. Ala., Miss.

Phyllosticta aesculicola Sacc., leaf-spot. Miss.

Ucinula flexuosa Pk., powdery mildew. Ala.

AGROPYRON.

**A. repens*, couchgrass, quackgrass.

*Bacterium coronafaciens atropurpureum** C. S. Reddy and James Godkin, bacterial blight. Wis., N. Dak.

Claviceps purpurea (Fr.) Tul., ergot. Occurs scatteringly throughout the range of host.

Colleotrichum graminicolum (Ces.) Wils., anthracnose. N. Y., Pa., Minn.; probably other States.

Erysiphe graminis DC., powdery mildew. N. Y., Pa., Mich., Minn., Mont.

Helminthosporium giganteum Heald and Wolf, leaf-spot. D. C., Md.

H. sativum Pam., King, and Bak., spot-blotch. Wis., N. Dak.

Ophiobolus graminis Sacc., take-all. N. Y.

Phyllachora graminis (Pers.) Fekl., tar-spot. General throughout range of host.

Phyllosticta sp., leaf-spot. Pa.

Puccinia clematidis (DC.) Lagh., leaf-rust. General.

P. coronata Cda., rust. Vt.

P. graminis Pers., stem-rust. General.

Pyrenophora tritici-repentis (Died.) Drechs., leaf-blight. Wis.

Septoria agropyri Ell. and Ev., leaf-spot. Wis.

Tilletia earlei Griff., covered smut. N. Dak.

Urocystis agropyri (Preuss) Schroet., smut. Vt., Mass., Conn., N. Y., Pa.

Ustilago hypodytes (Schl.) Fr., smut. N. Y.

U. macrospora Desm., smut. Mass., Wis., Iowa.

U. striaeformis (West.) Niessl, stripe-smut. N. Y.

AGROSTIS.

A. capillaris, bentgrass.

Puccinia graminis Pers., stem-rust. General east of Great Plains.

Scolecotrichum graminis Fckl., leaf-spot. Ind.

Ustilago striaeformis (West.) Niessl, stripe-smut. Conn., Miss. Valley.

A. palustris, redtop.

Claviceps purpurea (Fr.) Tul., ergot. Pa., Mich., Minn., N. Dak.

Colletotrichum graminicolum (Ces.) Wils., anthracnose. Pa.

Corticium vagum Berk. and Curt., root-rot. General.

Erysiphe graminis DC., powdery mildew. Minn.

Helminthosporium dematioideum Bub. and Wrob., leaf-spot. Conn., N. Y.

Ophiobolus graminis Sacc., take-all. N. Y.

Puccinia graminis Pers., stem-rust. General east of Great Plains.

Pythium sp., damping-off. Conn.

Sclerotium rhizodes Auer., Sclerotium blight. Conn.

Scolecotrichum graminis Fckl., leaf-spot. Pa., Wis.

Urocystis agropyri (Preuss) Schroet., smut. Pa., Wis.

Ustilago striaeformis (West.) Niessl, stripe-smut. General east of Great Plains.

A. stolonifera, carpet bentgrass.

Corticium vagum Berk. and Curt., root-rot. General.

Helminthosporium giganteum Heald and Wolf, leaf-spot. D. C.

H. stenacrum Drechs., leaf-spot. Conn.

AILANTHUS.

A. glandulosa, tree-of-heaven.

Cercospora glandulosa Ell. and Kell., leaf-spot. Ala., Ill., Kans., Nebr., Tex.

Nectria cinnabarina Fr., canker. N. J., Kans.

ALLIUM.

A. ascalonicum, shallot.

Colletotrichum circinans (Berk.) Vogl., smudge. Ill., Wis.

Heterodera radicularis (Greef) Muell., root-knot.

Peronospora schleideni Ung., downy mildew. La.

A. cepa, onion.

Aspergillus niger Tiegh., black-mold. General.

Bacillus carotovorus L. R. Jones (*Erwinia carotovora* (Jones) Com. S. A. B.), soft-rot. General.

B. cepivorus Del., rot. W. Va.

Botrytis sp., gray-mold. General.

B. allii M. T. Munn, neck-rot. N. Y., Ohio, Ill., Mich., Wis., Pacific Northwest.

B. byssoidea Walker, mycelial neck-rot. Conn., Ill., Wis.

B. squamosa Walker, small sclerotial neck-rot. Ill., Wis.

Colletotrichum circinans (Berk.) Vogl., smudge. General east of Great Plains.

Corticium vagum Berk. and Curt., stem-rot. Ohio, Wash.

Cuscuta sp., dodder. Ill., Wis., Calif.

Fusarium sp., root-rot. Frequent occurrence.

F. cepae J. Hanzawa, bulb rot. Ill.

F. mali Taub., pink-root. Occurs in widely scattered States.

Heterodera radicularis (Greef) Muell., root-knot. Tex., Ind.

Macrosporium porri Ell., mold. New England, Miss., Ind., Utah.

M. sarcinula parasiticum Thuem., black stalk-rot. General.

Peronospora schleideni Ung., downy mildew. General.

Puccinia porri (Sow.) Wint., rust. Conn.

Pythium debaryanum Hesse, damping-off. Mass.

Sclerotium cepivorum Berk., white-rot. Va., Ky., Oreg.

S. rolfsii Sacc., stem-rot. Ala.

Urocystis cepulae C. C. Frost, smut. General.

ALLIUM—Continued.*A. sativum*, garlic.*Macrosporium sarcinula parasiticum* Thuem., black stalk-rot. La.*Sclerotium cepivorum* Berk., white-rot. Oreg.*S. rolfsii* Sacc., stem-rot. La.*Tylenchus dipsaci* (Kuehn) Bast., bulb nematode. Calif.*A. schoenoprasum*, chives.*Puccinia porri* (Sow.) Wint., rust. Conn.**ALNUS.***A. incana*, speckled alder.*Cylindrosporium vermiforme* Davis, leaf-spot. Wis.*Erysiphe aggregata* (Pk.) Farl., powdery mildew. Me., N. Y., Wis.*Exoascus tosquinetii* Sacc., catkin deformation. Minn.*Hymenochaete agglutinans* Ell., stem girdling. Pa.*Phyllactinia corylea* (Pers.) Karst., powdery mildew. New England, N. Y., Wis.*Taphrina robinsoniana* Gies., catkin deformation. N. Y., Md., Va.**A. rhombifolia*, white alder.*Fomes igniarius* (L.) Fr., white heart-rot. Common in host range.*Melampsoridium alni* (Thuem.) Diet., rust. Calif.**A. rubra*, alder.*Cercospora alni* Dearn. and Barth., leaf-spot. Wash., Oreg.*Exoascus* sp., catkin deformation. Wash., Oreg.*Fomes applanatus* (Pers.) Wallr. (*Ganoderma applanatum* (Pers.) Pat.), white-streaked rot. Wash.*F. igniarius* (L.) Fr., white-heart-rot. Common in host range.*Gnomonia alni* Plow., leaf-spot. Calif.*Gnomoniella tubiformis* (Tode) Sacc., black-spot. Oreg.*Melampsoridium alni* (Thuem.) Diet., rust. Calif.*Microsphaera alni* (Wallr.) Wint., powdery mildew. Wash., Oreg.*Phyllactinia corylea* (Pers.) Karst., powdery mildew. Wash.*Polystictus hirsutus* (Wulf.) Fr., white-rot.*Septoria alnifolia* Ell. and Ev., leaf-spot. Wash., Oreg.*A. rugosa*, hazel alder.*Erysiphe aggregata* (Pk.) Farl., powdery mildew. N. Y., W. Va.*Exoascus tosquinetii* Sacc., catkin deformation. Me., Mass., Ala.*Gnomoniella tubiformis* (Tode) Sacc., black-spot. Pa.*Microsphaera alni* (Wallr.) Wint., powdery mildew. Ala.*Mycosphaerella hippocastani* (Otto Jaap) Kleb., leaf-spot. N. Y.*Phyllactinia corylea* (Pers.) Karst., powdery mildew. Ala., Ohio.*Taphrina robinsoniana* Gies., catkin deformation. Md., Va.**A. sinuata*, alder.*Microsphaera alni* (Wallr.) Wint., powdery mildew. Alaska.*Phyllachora* sp., leaf-spot. Wash.*A. tenuifolia*, mountain alder.*Cylindrosporium* sp., leaf-spot. Mont.*Exoascus* spp., catkin deformation. Mont., Idaho, Oreg.*E. tosquinetii* Sacc., catkin deformation. Idaho.*Fomes igniarius* (L.) Fr., white heart-rot. Mont.*Gnomoniella tubiformis* (Tode) Sacc., black-spot. Oreg.*Phyllactinia corylea* (Pers.) Karst., powdery mildew. Colo., N. Mex., Idaho, Oreg.*Polystictus hirsutus* (Wulf.) Fr., white-rot.**ALTHAEA.***A. rosea*, hollyhock.*Alternaria* sp., leaf-spot. Del., Mich., Nebr.*Ascochyta althaeina* Sacc. and Bizz., leaf-spot. N. Y.*A. parasitica* Fautr., leaf-spot. Conn., Del., W. Va.*Cercospora althaeina* Sacc., leaf-spot. General east of Great Plains.*C. kellermanii* Bub., leaf-spot. Ind., Ohio.*C. nebulosa* Sacc., leaf-spot. Nebr.

ALTHAEA—Continued.**A. rosea**, hollyhock—Continued.

- Colletotrichum malvarum* (Braun and Casp.) E. A. Southworth, anthracnose. N. Y., Ohio, Ind., Iowa.
Heterodera radicum (Greef) Muell., root-knot.
Ozonium omnivorum Shear (*Phymatotrichum omnivorum* (Shear) Dug.), root-rot. Tex.
Phyllosticta althaeina Sacc., leaf-spot. N. Y., W. Va., Ohio.
Puccinia hibiscata (Schw.) Kell., rust. Nebr.
P. malvacearum C. G. Bertero, rust. General.
P. sherardiana Koern., rust. Calif.
Septoria fairmani Ell. and Ev., leaf-spot. N. Y.

AMARYLLIS.**A. belladonna**, belladonna-lily.

- Botrytis* sp., rot. Calif.
Cercospora amaryllidis Ell. and Ev., leaf-spot. La.

AMELANCHIER.**Amelanchier** sp., shadblow (*serviceberry, *juneberry, *shadbush, *saskatoon)

- Bacillus amylovorus* (Burr.) Trev. (*Erwinia amylovora* (Burr.) Com. S. A. B.), blight. Wash.
Dimerosporium collinsii (Schw.) Thuem. General.
Erysiphe polygoni DC., powdery mildew. Mont.
Fabraea maculata (Lév.) Atk., leaf-blight. Ala., Ind., N. Dak., Kans., Mont., Idaho.
Gymnosporangium blasdaleanum (Diet. and Holw.) Kern, rust. Oreg., Calif.
G. botryapites (Schw.) Kern, rust. Mass., Conn., N. Y., N. J., Pa.
G. clavariaeforme (Jacq.) DC., rust. N. Y. to Del., west to Utah.
G. corniculans Kern, rust. Vt. to Iowa, south to W. Va.
G. germinale (Schw.) Kern, rust. New England; N. Y., Mich., Wis.
G. inconspicuum Kern, rust. Colo., N. Mex., Utah.
G. juvenescens Kern, rust. Northern Great Plains States; Wis., Idaho.
G. kernianum Bethel, rust. Oreg.
G. nelsoni Arth., rust. Rocky Mt. States; Nebr.
G. nidus-avis Thax., rust. Mass. to Wis.; south to N. C.
Nummularia discreta (Schw.) Tul., blister canker. Mass., Ohio, Kans.
Phyllostictia corylea (Pers.) Karst., powdery mildew. Wash.
Phyllosticta innumerabilis Pk., leaf-spot. Nebr.
P. pauperula Pk., leaf-spot. Kans.
P. virginiana (Ell. and Hals.) Seaver, leaf-spot. N. Y., Pa., Wis.
Plowrightia morbosa (Schw.) Sacc., black-knot. Minn., Mont.
Podosphaera oxyacanthae (DC.) D By., powdery mildew. Mass., Minn., Mo., Nebr.
Sclerotinia amelanchieris J. M. Reade, fruit-rot, blight. N. Y.
S. gregaria B. F. Dana, blight. Wash.

AMMOPHILA.**A. arenaria**, beachgrass.

- Claviceps purpurea* (Fr.) Tul., ergot. Mich.
Ustilago striaeformis (West.) Niessl, stripe smut. New England Coast States.

AMORPHA.**A. fruticosa**, indigobush.

- Cercospora passaloroides* Wint., leaf-spot. Ala., Ill., Nebr., Kans.
Uropyxis amorphae (Curt.) Schroet., rust. General east of Rocky Mts.

AMPELOPSIS.**A. arborea**, peppervine.

- Cercospora arboriae* Tharp, leaf-spot. Tex.
C. viticola (Ces.) Sacc., leaf-spot. La.
Guignardia bidwellii (Ell.) Viala and Ravaz, black-rot. Miss.

A. cordata, heartleaf ampelopsis.

- Cercospora truncata* Ell. and Ev., leaf-spot. La.
C. viticola (Ces.) Sacc., leaf-spot. Ala., La.

AMPELOPSIS—Continued.

A. quinquefolia, Virginia creeper.*Cercospora ampelopsidis* Pk., leaf-spot. General east of Great Plains.*C. psedericola* L. R. Tehon, leaf-spot. Ill.*C. pustula* Cke., leaf-spot. Occurs in widely scattered States east of Great Plains.*Cladosporium herbarum* Lk., die-back. N. J.*Guignardia bidwellii* (Ell.) Viala and Ravaz, black-rot. General east of Great Plains.*Phyllosticta viticola* (Berk. and Curt.) Thuem., leaf-spot. General.*Plasmopara viticola* (Berk. and Curt.) Berl. and DeToni, downy mildew. Me., Ala., Wis., Iowa.*Septogloeum ampelopsidis* (Ell. and Ev.) Sacc., leaf-spot. Ill., Wis., Iowa, Nebr.*Septoria ampelopsidis* Ell., leaf-spot. Nebr.*Uncinula necator* (Schw.) Burr., powdery mildew. General east of Great Plains.*A. tricuspidata*, *Boston ivy, Japanese creeper.*Cladosporium* sp., die-back. N. J.*Guignardia bidwellii* (Ell.) Viala and Ravaz, black-rot. Atlantic Coast States; Tex.

AMYGDALUS.

A. communis, almond.*Armillaria mellea* (Vahl) Quel., root-rot. Calif.*Bacillus amylovorus* (Burr.) Trev. (*Erwinia amylovora* (Burr.) Com. S. A. B.), blight. Mass.*Bacterium tumefaciens* EFS. and Town. (*Phytomonas tumefaciens* (EFS. and Town.) Com. S. A. B.), crown-gall. Ariz., Calif.*Cercospora circumscissa* Sacc., shot-hole. Oreg., Calif.*Cladosporium carpophilum* Thuem., scab. Calif.*Coryneum beijerinckii* Oud., blight. Oreg., Calif.*Cyphella marginata* McAlp., die-back. Oreg.*Gloeosporium* sp., fruit-spot and twig-spot. Calif.*Heterodera radicolica* (Greef) Muell., root-knot. Ariz.*Pythiacystis citrophthora* E. H. and R. E. Smith, brown-rot, die-back. Calif.*Sclerotinia fructicola* (Wint.) Rehm (*S. americana* (Wormald) Norton and Ezekiel), brown-rot. Calif.*Tranzschelia punctata* (Pers.) Arth., rust. Calif.*A. persica*, peach.*Armillaria mellea* (Vahl) Quel., root-rot. Miss., Tex., Ark., Ind., Oreg., Calif., Alaska.*Bacterium cerasi* F. L. Griffin, gummosis. Oreg.*B. pruni* EFS. (*Phytomonas pruni* (EFS.) Com. S. A. B.), bacterial spot. General east of Rocky Mts.*B. tumefaciens* EFS. and Town. (*Phytomonas tumefaciens* (EFS. and Town.) Com. S. A. B.), crown-gall. General.*Botrytis cinerea* Auct., fruit-rot. Calif.*Cephalothecium roseum* Cda., pink-rot. Md., Ill., Calif.*Cercospora circumscissa* Sacc., shot-hole. General.*C. consobrina* Ell. and Ev., leaf-spot. La., Ill.*Cercospora persicae* Sacc., frosty mildew. General.*Choanephora persicaria* E. D. Eddy, fruit-rot. In storage.*Cladosporium carpophilum* Thuem., scab. General.*Clitocybe monadelphica* (Morgan) Sacc., root-rot. Fla., Ark., Mo.*Comandra pallida* DC., bastard toadflax. Wash.*Coryneum beijerinckii* Oud., blight. General, especially in Western States.*Cyphella marginata* McAlp., die-back. Oreg.*Diplodia natalensis* Ev., gumming. Fla.*Exoascus deformans* (Berk.) Fckl., leaf-curl. General.*Fomes pinicola* Fr., brown crumbly rot. Oreg.*F. roseus* (Alb. and Schw.) Fr., brown pocket rot. Va.*Fusarium* spp., fruit-rot. Calif.*F. gemmiperda* Aderh., bud-rot. Ga.*Glomerella cingulata* (Ston.) Spauld. and Schrenk, bitter-rot. Fla., Ark., Ohio.

AMYGDALUS—Continued.*A. persica*, peach—Continued.

- Helmintosporium carpophilum* Lév., pustular spot. N. Y., Ohio, Mich., Utah.
Heterodera radicolica (Greef) Muell., root-knot. South Atlantic and Gulf States; Calif.
Lenzites saepiaria Fr., heart-rot. Oreg.
Monilia sp., western brown-rot. Oreg.
Ozonium omnivorum Shear (*Phymatotrichum omnivorum* (Shear) Dug.), root-rot. Tex., N. Mex., Ariz.
Phoma persicae Sacc., stem canker. Mass., Conn., Pa., Del., Md., Va., Ohio, Mich.
Phyllosticta circumscissa Cke., leaf-spot. N. Y., N. J., Wash.
Physoclora malorum (Pk.) Shear (*P. cydoniae* Am. Auct.), black-rot. Del., Ind.
Podosphaera oxycanthae (DC.) D By., powdery mildew. General.
Polyporus lacteus Fr., sap-rot and heart-rot.
Pythiacystis citrophthora E. H. and R. E. Smith, die-back. Calif.
Rhizopus nigricans Ehr., black-mold rot. Conn., Del., Ga., Fla., Ark., Ill., Ind., Kans.
Sclerotinia cinerea (Bon.) Schroet. (*Monilia oregonensis* Barss and Posey), blossom blight. Pacific coast.
S. fructicola (Wint.) Rehm (*S. americana* (Wormald) Norton and Ezekiel), brown-rot. General.
Sclerotium rolfsii Sacc., stem-rot (of seedlings). La.
Sphaerotheca pannosa (Wallr.) Lév., powdery mildew. General.
Stereum purpureum Pers., silver leaf. N. Y., Md.
Trametes carnea (Nees) Cke., wood-rot. Oreg.
Tranzschelia punctata (Pers.) Arth., rust. General.
Valsa leucostoma (Pers.) Fr., die-back. General.
Verticillium albo-atrum Reinke and Berth., wilt. N. Y., N. J.
Chlorosis, nonpar. Southwest.
Gummosis, various causes. General.
Little peach, undet. East of Miss. River, especially Middle Atlantic States.
Phoney peach, undet. Central and southern Ga.
Rosette, undet. Tenn., Fla., S. C., Ga., Ala., Miss., La., Okla., Ark., Mo., Kans.
Yellows, nonpar. East of Miss. River and north of Gulf States.
- A. persica nectarina*, nectarine.
Cladosporium carpophilum Thuem., scab. Conn., N. Y., Ill.
Exoascus deformans (Berk.) Fckl., leaf-eurl. Wash.
Sclerotinia fructicola (Wint.) Rehm (*S. americana* Norton and Ezekiel), brown-rot. Conn., N. Y.

ANANAS.

- A. sativus*, pineapple.
Spegazzinia ornata Sacc. Fla.
Thielaviopsis paradoxa (DeSeyn.) Hoehn., soft-rot. Fla.
Red wilt, undet. Fla.

ANCHUSA.

- A. capensis*, Cape bugloss.
Puccinia dispersa Eriks., rust. Ind.
A. officinalis, common bugloss.
Puccinia dispersa Eriks., rust. Ind.

ANETHUM.

- A. graveolens*, dill.
Cercospora anethi Sacc., leaf-spot. N. Dak.

ANNONA.

- A. cherimola*, cherimoya.
Gloeosporium sp., anthracnose. Fla.
Uredo cherimoliae Lagh., rust. Fla.
A. squamosa, sugar-apple.
Uredo cherimoliae Lagh., rust. Fla.

ANT RRHINUM.*A. majus*, snapdragon.

Colletotrichum antirrhini F. C. Stewart, anthracnose. General east of Miss. River.

Corticium vagum Berk. and Curt., rot (of cuttings). N. Y.

Fusarium sp., root and crown rot. Wash.

Heterodera radicola (Greef) Muell., root-knot. D. C., Miss., Nebr.

Phyllosticta antirrhini Syd., leaf-spot, damping-off. Mass., N. Y., Va., Ind., Minn.

Puccinia antirrhini Diet. and Holw., rust. General.

Pythium sp., stem-rot, damping-off. N. Y.

Thielavia basicola (Berk. and Curt.) Zopf, black root-rot. N. J.

Verticillium albo-atrum Reinke and Berth., wilt. Mass.

APIUM.*A. graveolens*, celery.

Bacillus carotovorus L. R. Jones (*Erwinia carotovora* (Jones) Com. S. A. B.), soft-rot. General.

Bacterium apii I. C. Jagger (*Phytomonas apii* (Jagger) Com. S. A. B.), bacterial leaf-spot. N. Y., Ind., Mich., Minn.

Botrytis sp., gray-mold rot. N. Y., Idaho, Calif.

Cercospora apii Fresen., early-blight. General.

Corticium vagum Berk. and Curt., root-rot. General.

Fusarium sp., pink-root. Fla.

F. sp., root-rot. N. J., Fla., Ohio, Calif.

F. sp., yellows. Conn., Mass., N. Y., N. J., Pa., Ohio, Mich., Ind., Minn.

Heterodera radicola (Greef) Muell., root-knot. N. J., Va., N. C., S. C., Fla., Ark., Ind., Kans., Calif.

Phoma apicola Speg., root-rot. Ohio, Mich.

Phyllosticta apii Hals., leaf-spot. N. J., Del.

Pythium debaryanum Hesse, damping-off. Conn.

Sclerotinia minor I. C. Jagger, drop. N. Y., Pa., Fla.

S. sclerotiorum (Lib.) Mass., foot-rot. General.

Septoria apii Rostr., late-blight. General

Bacterial heart-rot. East of Great Plains.

Black-heart, undet. N. Y., Pa., Fla., La., Calif.

Crinkle, nonpar. Pa.

Hollow-stem, nonpar. Pa., Calif.

Mosaic, undet. Mass., N. Y., N. J., Ind., Minn.

**A. graveolens rapaceum*, celeriac.

Cercospora apii Fresen., early-blight. Conn.

Phoma apicola Speg., root-rot. N. Y.

Septoria apii Rostr., late-blight. Conn., N. Y.

AQUILEGIA.*Aquilegia* spp., columbine.

Erysiphe polygoni DC., powdery mildew. Conn., N. Y., Ind., Ohio, Ill., Wis.

Gloeosporium aquilegiae Thuem., leaf-spot. Tex.

Puccinia clematidis (DC.) Lagh., rust. Ind., Mont., Colo., Utah, Idaho, Oreg., Wash., Calif.

Sclerotinia sclerotiorum (Lib.) Mass., crown-rot. Del.

Urocystis sorosporioides Koern., rust. Utah.

ARACHIS.*A. hypogaea*, peanut.

Bacterium solanacearum EFS. (*Phytomonas solanaceara* (EFS.) Com. S. A. B.), bacterial wilt. N. C.

Botrytis sp., stem-rot. Tenn.

Cercospora personata (Berk. and Curt.) Ell. and Ev., leaf-spot. General where crop is grown.

Corticium vagum Berk. and Curt., stem-rot. N. C., Fla.

Fusarium vasinfectum Atk., wilt. Va., Ala.

Ozonium omnivorum Shear (*Phymatotrichum omnivorum* (Shear) Dug.), root-rot. Tex.

Phoma sp., stem-rot. Ala.

ARACHIS—Continued.

A. hypogaea, peanut—Continued.

Puccinia arachidis Speg., rust. Fla.

Sclerotium rolfsii Sacc., stem-rot. General in South.

Thielavia basicola (Berk. and Br.) Zopf, black root-rot

ARALIA.

A. spinosa, devils-walkingstick.

Cercospora atomaculans Ell. and Ev., leaf-spot. La.

Phyllosticta everhartii Sacc. and Syd., leaf-spot. W. Va.

ARBUTUS.

A. menziesii, madrone.

Exobasidium vaccinii (Fekl.) Wor., gall. Calif.

Mycosphaerella arbuticola Pk., leaf-spot. Pacific coast.

Phyllosticta fimbriata Ell. and Ev., leaf-spot. Oreg.

Pucciniastrum sparsum (Wint.) Ed. Fischer, rust. Pacific coast.

Rhytisma arbuti Phill., tar-spot. Pacific coast.

ARCTOSTAPHYLOS.

Arctostaphylos spp., bearberry, manzanita.

Exobasidium vaccinii (Fekl.) Wor., red leaf-spot. Colo., Oreg., Wash., Calif.

Phoradendron villosum Nutt., mistletoe. Oreg., Calif.

Pucciniastrum sparsum (Wint.) Ed. Fischer, rust. Pacific coast.

ARISTOLOCHIA.

A. serpentaria, Virginia snakeroot.

Cercospora serpentaria Ell. and Ev., leaf-spot. Del., Ala.

ARONIA.

Aronia spp., chokeberry.

Bacillus amylovorus (Burr.) Trev. (*Erwinia amylovora* (Burr.) Com. S. A. B.), blight. W. Va.

Cercospora mali Ell. and Ev., leaf-spot. Ala.

C. piri Farl., leaf-spot. N. H., Wis.

Gymnosporangium clavariaeforme (Jacq.) DC., rust. Mass.

G. davisii Kern, rust. Me., Mich., Wis.

G. germinale (Schw.) Kern, rust. Me., Mass.

G. transformans (Ell.) Kern, rust. Mass., Pa., N. J.

Phyllosticta arbutifolia Ell. and Mart., leaf-spot. N. J.

ARUNDINARIA.

Arundinaria sp., bamboo, cane.

Puccinia arundinariae Schw., rust. Tex.

A. macrosperma, southern cane.

Puccinia arundinariae Schw., rust. S. C.

A. tecta, small cane.

Puccinia arundinariae Schw., rust. S. C., Miss., La.

ASCLEPIAS.

A. tuberosa, butterflyweed, *pleurisy root.

Cercospora asclepiadorae Ell. and Kell., leaf-spot. Ala.

Phyllosticta tuberosa Ell. and Mart., leaf-spot. N. J.

Puccinia jamesiana (Pk.) Arth., rust. Okla., Iowa, Kans.

Uromyces howei Pk., rust. Del., Fla., Ill., Iowa, Kans.

ASIMINA.

A. triloba, papaw.

Cercospora asiminae Ell. and Kell., leaf-spot. Ala., Miss., Kans.

Phleospora asiminae Ell. and Morgan, leaf-blotch. Ohio, Ill., Mo., Kans.

Phyllosticta asiminae Ell. and Kell., leaf-spot. General.

ASPARAGUS.*A. officinalis*, asparagus.*Armillaria mellea* (Vahl) Quel., root-rot. Oreg.*Botrytis* sp., blight. N. Y., Calif.*Cercospora asparagi* Sacc., leaf-spot. Del., Va., Ala., Tex., Nebr., Calif.*C. caulicola* Wint., leaf-spot. Md., S. C., Ga., Ala., Mo.*Cladosporium fasciculare* (Pers.) Fr. S. C.*Colletotrichum* sp., anthracnose. Conn., Ill.*Corticium vagum* Berk. and Curt., root-rot. Mass., N. Y., Pa., N. J., Mich., N. Dak., Wash.*Fusarium* sp., dwarfing, stem-rot. Mass., Conn., N. Y., N. J., Ill., Minn., Calif.*Puccinia asparagi* DC., rust. General.

Dwarfing, undet. N. J.

Fasciation, undet. Conn., Calif.

Leopard spot, undet. Md., Nebr.

AVENA.*A. sativa*, oats.*Bacterium coronafaciens* Charlotte Elliott (*Phytomonas coronafaciens* (Elliott) Com. S. A. B.), halo leaf-blight. General.*Claviceps purpurea* (Fr.) Tul., ergot. Iowa, Minn., N. Dak., Kans., Colo., Wash.*Colletotrichum graminicolum* (Ces.) Wils., anthracnose. General east of Great Plains.*Erysiphe graminis* DC., powdery mildew. Scattered, especially in Pacific States.*Fusarium culmorum leteius* Sherb., seedling blight. Oreg.*Gibberella saubinetii* (Mont.) Sacc., scab. Scatteringly east of Great Plains.*Helminthosporium avenae* Eidam, leaf-spot. Widely distributed.*Leptosphaeria avenaria* G. F. Weber, speckled blotch. Ky., Minn., Wis.*Phyllachora graminis* (Pers.) Fekl., black-spot. Nebr.*Puccinia coronata* Cda., crown-rust. General.*P. graminis* Pers., stem-rust. General.*Scolecotrichum graminis* Fekl., leaf-spot. N. Y., Ill.*Ustilago avenae* (Pers.) Jens., loose smut. General.*U. levis* (Kell. and Sw.) Magn., covered smut. General.

Blast, undet. General.

AZALEA.*Azalea* spp., azalea.*Corticium vagum* Berk. and Curt., stem-rot. Ga.*Exobasidium vaccinii* (Fekl.) Wor., gall. Atlantic Coast and Gulf States, Ill.*Microsphaera alni* (Wallr.) Wint., powdery mildew. Conn., N. Y., Pa.*Pucciniastrum myrtilli* (Schum.) Arth., rust. Conn., Ga., Atlantic Coast States.*Ramularia angustata* Pk., leaf-spot. N. Y.*Septoria solitaria* Ell. and Ev., leaf-spot. Calif.*Synchytrium vaccinii* F. Thomas, red-gall. N. J.**BAMBUSA.***Bambusa* sp., bamboo.*Cladosporium graminum* (Pers.) Cda. S. C.*Coniosporium shiraianum* (Syd.) Bub. Fla.*Helminthosporium* sp., leaf-spot. Fla.*Puccinia melanocephala* Syd., rust. Fla.**BEGONIA.***Begonia* sp., begonia.*Aphelenchus olesistus* Ritzema Bos, nematode (nursery). N. Y., Pa.*Bacterium tumefaciens* EFS. and Town. (*Phytomonas tumefaciens* (EFS. and Town.) Com. S. A. B.), crown-gall. Miss.*Botrytis* sp., blight. Ind., Ill.*Cercospora* sp., leaf-spot. Fla., Tex.*Gloeosporium* sp., anthracnose. Fla., La.

BEGONIA—Continued.

Begonia sp., begonia—Continued.

Heterodera radicum (Greef) Muell., root-knot. Ohio, Ind., Nebr., Calif. (greenhouse).

Thielavia basicola (Berk. and Br.) Zopf, black root-rot. Mass., Ohio.

BENZOIN.

B. aestivale, spicebush.

Hymenochaete agglutinans Ell. Appalachian Mts.

Phoradendron flavescens (Pursh) Nutt., mistletoe. Eastern States.

Phyllosticta linderæ Ell. and Ev., leaf-spot. Del., W. Va.

P. lindericola Ell. and Ev., leaf-spot. W. Va.

BERBERIS.

B. canadensis, Allegheny barberry.

Puccinia graminis Pers., rust. Va., W. Va.

B. thunbergii, Japanese barberry.

Verticillium albo-atrum Reinke and Berth., wilt. N. Y.

Bacterial leaf-spot, undet. N. Y., Minn.

B. vulgaris, common barberry.

Puccinia graminis Pers., rust. General wherever host occurs.

Bacterial leaf-spot, undet. N. Y., Wis., Iowa, Nebr., Wash.

BETA.

B. vulgaris, beet.

Actinomyces scabies (Thax.) Gues., scab. Frequent where beets are grown.

Bacterium teulium H. A. Metcalf, soft-rot. Nebr.

B. tumefaciens EFS. and Town. (*Phytophthora tumefaciens* (EFS. and Town.) Com. S. A. B.), crown-gall. Conn., Pa., Wis., Idaho.

Cercospora beticola Sacc., leaf-spot. General.

Corticium vagum Berk. and Curt., root-rot. Occurs scatteringly, especially throughout the Northern States.

Fusarium culmorum leteius Sherb., seedling blight. Pacific coast.

Heterodera radicum (Greef) Muell., root-knot. Southern States, Ark., Ind., Kans., Colo., Calif.

Ozonium omnivorum Shear (*Phymatotrichum omnivorum* (Shear) Dug.), root-rot. Tex.

Peronospora schachtii Fekl., downy mildew. N. Y., Calif.

Phoma betæ (Oud.) Frank, root-rot and leaf-spot. N. J., N. C., Mich., Wis., N. Dak., S. Dak., Kans., Colo., N. Mex., Wash., Oreg.

Puccinia sarcobati (Pk.) Bethel, rust. Utah.

Pythium aphanidermatum (Edson) Fitz., damping-off. Wis.

P. debaryanum Hesse, damping-off. Conn.

Sclerotinia sclerotiorum (Lib.) Mass., watery soft-rot. Conn., Ill.

Sclerotium rolfsii Sacc., stem-rot. S. C., Ga., La.

Septoria betæ West., leaf-spot. Mass., Del., Ind.

Tylenchus dipsaci (Kuehn) Bast., stem nematode. Kans.

Uromyces betæ (Pers.) Lév., rust. Colo., Oreg., Calif.

Curly-top, undet. Tex., Colo., Utah, Calif.

B. vulgaris, sugar beet.

Actinomyces scabies (Thax.) Gues., scab. Conn., Ohio, Idaho.

Bacterium aptatum N. Brown and C. Jamieson (*Phytophthora aptatum* (Brown and Jamieson) Com. S. A. B.), leaf-spot. Utah.

B. beticola EFS., N. Brown, and Town. (*Phytophthora beticola* (EFS., Brown, and Town.) Com. S. A. B.), tuberculosis. Va., Kans., Colo., Utah.

B. tumefaciens EFS. and Town. (*Phytophthora tumefaciens* (EFS. and Town.) Com. S. A. B.), crown-gall. Ohio, Utah, Colo., Idaho, Calif.

Cercospora beticola Sacc., leaf-spot. General.

Corticium vagum Berk. and Curt., root-rot. General.

Fusarium sp., root-rot. Ind., Mich., Kans., Western States.

Heterodera radicum (Greef) Muell., root-knot. Ohio, Texas, Western States.

H. schachtii A. Schmidt, sugar-beet nematode. Wyo., Colo., Utah, Idaho, Calif.

Ozonium omnivorum Shear (*Phymatotrichum omnivorum* (Shear) Dug.), root-rot. Tex.

BETA—Continued.*B. vulgaris*, sugar beet—Continued.

- Peronospora schachtii* Fekl., downy mildew. Calif.
Phoma betae (Oud.) Frank, root-rot and leaf-spot. General.
Puccinia sarcobati (Pk.) Bethel, rust. Colo., Utah.
Pythium sp., damping-off. Ohio, Wis., Utah, Idaho, Calif.
P. aphanidermatum (Edson) Fitz., damping-off. Wis., Utah.
Sclerotium rolfsii Sacc., stem-rot. Ga., Tex., Calif.
Tylenchus dipsaci (Kuehn) Bast., stem nematode. Kans.
T. penetrans Cobb, nematode. Utah.
Uromyces betae (Pers.) Lév., rust. Calif.
 Curly-top, undet. Western States.
 Mosaic, undet. Ind., Kans., Nebr., Colo., Utah, Calif.

B. vulgaris cicla, Swiss chard.

- Actinomyces scabies* (Thax.) Gues., scab. Pa., Wis.
Cercospora beticola Sacc., leaf-spot. General.
Corticium vagum Berk. and Curt., root-rot. N. Y.
Heterodera radicolica (Greef) Muell., root-knot. Va., La.
Ozonium omnivorum Shear (*Phymatotrichum omnivorum* (Shear) Dug.), root-rot. Tex.
Sclerotium rolfsii Sacc., stem-rot. S. C., La.
Uromyces betae (Pers.) Lév., rust. Calif.

B. vulgaris macrorhiza, mangel-wurzel.

- Bacterium tumefaciens* EFS. and Town. (*Phytoplasma tumefaciens* (EFS. and Town.) Com. S. A. B.), crown-gall. Pa.
Cercospora beticola Sacc., leaf-spot. Conn., Minn., Iowa.
Corticium vagum Berk. and Curt., root-rot. Wash.
Phoma betae (Oud.) Frank, root-rot and leaf-spot. N. Y., Wis., Minn.
Pythium debaryanum Hesse, damping-off. Conn., Mich., Wis., Kans., Colo., Utah.
Sclerotium rolfsii Sacc., stem-rot. La.

BETULA.*B. alba*, white birch.

- Magnusiella flava* (Farl.) Sadeb., yellow leaf blister. Northeastern States.
Melanconium bicolor Nees, canker. N. Y., Ind.
Polyporus betulinus (Bull.) Fr., powdery sapwood rot. Vt., N. Y.

B. lenta, sweet birch.

- Fomes igniarius* (L.) Fr., white heart-rot.
Gloeosporium betularum Ell. and Mart., leaf-spot. Pa., N. J., Ill.
Microsphaera alni (Wallr.) Wint., powdery mildew. N. H.
Phyllactinia corylea (Pers.) Karst., powdery mildew. N. Y.
Phyllosticta betulae Ell. and Ev., leaf-spot. N. Y.
Septoria microsperma Pk., leaf-spot. Pa., W. Va.

B. lutea, yellow birch.

- Fomes applanatus* (Pers.) Wallr. (*Ganoderma applanatum* (Pers.) Pat.), white-streaked rot. Me., N. Y.
F. fomentarius (L.) Fr., white sapwood rot. New England, N. Y., Pa.
F. igniarius (L.) Fr., white heart-rot. Vt., N. Y.
Melampsorium betulae (Schum.) Arth., rust. N. H., Ind.
Melanconium bicolor Nees, canker. N. Y.
Microsphaera alni (Wallr.) Wint., powdery mildew. Mass.
Nectria coccinea (Pers.) Fr., associated with canker. Mich.
Polyporus betulinus (Bull.) Fr., powdery sapwood rot. N. Y.

B. nigra, river birch.

- Fomes igniarius* (L.) Fr., white heart-rot. Conn.
Gloeosporium betularum Ell. and Mart., leaf-spot. Mass., Pa., Ind., Ill., Wis.
Nectria ditissima Tul., European canker. Pa.
Phoradendron flavescens (Pursh) Nutt., mistletoe. Ind.
Phyllactinia corylea (Pers.) Karst., powdery mildew. Ill., Mo.

B. occidentalis, western birch.

- Fomes fomentarius* (L.) Fr., white sapwood rot.
F. igniarius (L.) Fr., white heart-rot. Mont.

BETULA—Continued.*B. occidentalis*, western birch—Continued.

- Gnomonia campylostyla* Auer. Colo.
Melampsoridium betulae (Schum.) Arth., rust. Mont., Idaho.
Phyllactinia corylea (Pers.) Karst., powdery mildew. Mont., Wyo.
Septoria betulicola Pk., leaf-spot. Wash.
Trametes pini (Brot.) Fr. (*Fomes pini* (Thore) Karst.), honeycomb rot. Idaho.

B. papyrifera, canoe birch.

- Eoascus betulinus* (Rostr.) Sadeb., witches'-broom. Wis.
Fomes applanatus (Pers.) Wallr. (*Ganoderma applanatum* (Pers.) Pat.), white-streaked rot. Me., Minn.
F. everhartii (Ell. and Gall.) Schrenk, white-rot. Minn.
F. fomentarius (L.) Fr., white sapwood rot. Mass., Minn.
F. ignarius (L.) Fr., white heart-rot. Mich., Minn.
Gloeosporium betulae-papyriferae Dearn. and Overh., anthracnose. Pa.
Magnusiella flava (Farl.) Sadeb., yellow leaf blister. Northeastern States.
Melampsoridium betulae (Schum.) Arth., rust. Me.
Phyllactinia corylea (Pers.) Karst., powdery mildew. Iowa.
Polyporus betulinus (Bull.) Fr., powdery sapwood rot. Mass., Conn., Minn.

B. populifolia, gray birch.

- Fomes fomentarius* (L.) Fr., white sapwood rot. Me.
Magnusiella flava (Farl.) Sadeb., yellow leaf blister. Northeastern States.
Melampsoridium betulae (Schum.) Arth., leaf-rust. Northeastern States.
Melanconium bicolor Nees, canker. N. Y.
Polyporus betulinus (Bull.) Fr., powdery sapwood rot. Northeastern States.
Septoria betulina Pk., leaf-spot. Wis.
Venturia ditricha (Fr.) Aderh. Me., N. Y.

BIGNONIA.*B. capreolata*, crossvine.

- Cercospora capreolata* Ell. and Ev., leaf-spot. Miss.
Dimerosporium tropicale Speg., sooty mold. Miss.

B. radicans, trumpet creeper.

- Cercospora pallida* Ell. and Ev., leaf-spot. La.
C. sordida Sacc., leaf-blight. General east of Great Plains, especially in the South.
Erysiphe cichoracearum DC., powdery mildew. Ill.
Hendersonia peckii Clint. N. Y.
Mycosphaeraalni (Wallr.) Wint., powdery mildew. Va., Ala., Ohio, Ind., Miss.
Phyllosticta tecomae Sacc., leaf-spot. Miss.
Septoria tecomae Ell. and Ev., leaf-spot. W. Va., Tex.

BRASSICA.*B. campestris*, rutabaga.

- Albugo candida* (Pers.) O. Kuntze, white-rust. Mass.
Alternaria brassicae (Berk.) Sacc., black leaf-spot. Va.
Bacterium campestre (Pam.) EFS. (*Phytomonas campestre* (Pam.) Com. S. A. B.), black-rot. Va., Wis., Minn., Iowa.
Erysiphe polygoni DC., powdery mildew. Conn., Fla., Wash.
Heterodera radicolica (Greef) Muell., root-knot. Ala.
Mycosphaerella brassicicola (Fr.) Lindau, ring-spot. Calif.
Peronospora parasitica (Pers.) D By., downy mildew. Fla., Iowa.
Phoma lingam (Tode) Desm., black-leg. Ga.
Plasmiodiophora brassicae Wor., clubroot. Minn., N. Dak.

B. oleracea, cabbage.

- Albugo candida* (Pers.) O. Kuntze, white-rust. Ky., Idaho.
Alternaria brassicae (Berk.) Sacc., black leaf-spot. General.
A. herculea (Ell. and Mart.) J. A. Elliott, gray leaf-spot. Calif.
Bacillus carotovorus L. R. Jones (*Erwinia carotovora* (Jones) Com. S. A. B.), soft-rot. General.

BRASSICA—Continued.

B. oleracea, cabbage—Continued.

- Bacterium campestre* (Pam.) EFS. (*Phytomonas campestre* (Pam.) Com. S. A. B.), black-rot. General.
- B. maculicolum* McC. (*Phytomonas maculicola* (McC.) Com. S. A. B.), peppery leaf-spot. Conn., N. Y., Ala., Miss., La.
- Botrytis* sp., gray-mold. N. Y., Calif., Alaska.
- Cercospora bloxami* Berk. and Br., leaf-spot. Fla., Tex., Ill.
- C. cruciferarum* Ell. and Ev., leaf-spot. Ala.
- Corticium vagum* Berk. and Curt., wire-stem. General.
- Erysiphe polygoni* DC., powdery mildew. Md., Nebr., Tex., Oreg.
- Fusarium glutinans* Woll., yellows. General except New England.
- Heterodera radicularis* (Greef) Muell., root-knot. Southern States and Calif.
- Mycosphaerella brassicicola* (Fr.) Lindau, ring-spot. Oreg., Wash., Calif.
- Ovipidium brassicae* (Wor.) Dan., seedling blight. N. Y., Miss., Wis.
- Ozonium omnivorum* Shear (*Phymatotrichum omnivorum* (Shear) Dug.), root-rot. Tex.
- Peronospora parasitica* (Pers.) D By., downy mildew. General.
- Phoma lingam* (Tode) Desm., black-leg. General, especially in Eastern States.
- Plasmidiophora brassicae* Wor., clubroot. General.
- Pythium debaryanum* Hesse, damping-off. Conn., Pa.
- Sclerotinia sclerotiorum* (Lib.) Mass., drop, watery soft-rot. General.
- Sclerotium rolfsii* Sacc., stem-rot. Ala., Tex.
- Malnutrition, nonpar. Southern States, Long Island, Mass.
- Oedema, nonpar. N. Y.
- Speck, undet. Frequent in stored cabbage.
- Tipburn, nonpar. Ind.

B. oleracea acephala, kale, collards.

- Albugo candida* (Pers.) O. Kuntze, white-rust. Fla.
- Alternaria brassicae* (Berk.) Sacc., black leaf-spot. Southern States.
- Bacterium campestre* (Pam.) EFS. (*Phytomonas campestre* (Pam.) Com. S. A. B.), black-rot. N. C., Ala.
- Corticium vagum* Berk. and Curt., stem-rot. Wash.
- Fusarium glutinans* Woll., yellows. N. Y., N. C., S. C., Ind., Calif.
- Heterodera radicularis* (Greef) Muell., root-knot. N. Y., S. C., Ala.
- Mycosphaerella brassicicola* (Fr.) Lindau, ring-spot. Wash., Calif.
- Peronospora parasitica* (Pers.) D By., downy mildew. South Atlantic States; Oreg.
- Phoma lingam* (Tode) Desm., black-leg. N. C., Ga.
- Plasmidiophora brassicae* Wor., clubroot. Conn., Va., N. C., Wash.
- Sclerotium rolfsii* Sacc., stem-rot. Miss.

B. oleracea botrytis, cauliflower.

- Alternaria brassicae* (Berk.) Sacc., black leaf-spot. N. Y., Fla., La., Calif.
- A. herculea* (Ell. and Mart.) J. A. Elliott, gray leaf-spot. Calif.
- Bacillus carotovorus* L. R. Jones (*Erwinia carotovora* (Jones) Com. S. A. B.), soft-rot. Me., Mass., Va., Minn., Mo.
- Bacterium campestre* (Pam.) EFS. (*Phytomonas campestre* (Pam.) Com. S. A. B.), black-rot. General, especially in States east of Miss. River.
- B. maculicolum* McC. (*Phytomonas maculicola* (McC.) Com. S. A. B.), peppery leaf-spot. Conn., N. Y., Va., Ky., Fla.
- Corticium vagum* Berk. and Curt., stem-rot. La., Wash.
- Fusarium glutinans* Woll., yellows. Del., Ind., Calif.
- Mycosphaerella brassicicola* (Fr.) Lindau, ring-spot. Mass., Oreg., Calif.
- Peronospora parasitica* (Pers.) D By., downy mildew. N. Y., Va., Mo., Calif.
- Phoma lingam* (Tode) Desm., black-leg. N. Y.
- Plasmidiophora brassicae* Wor., clubroot. East of Miss. River and north of Va. and Ky.
- Pythium* sp., damping-off. Ohio, Oreg.
- Sclerotinia sclerotiorum* (Lib.) Mass., drop, watery soft-rot. Va., Miss., La., Calif.

BRASSICA—Continued.*B. oleracea caulorapa*, kohlrabi.*Heterodera radicolica* (Greef) Muell., root-knot. Ohio.*Peronospora parasitica* (Pers.) D By., downy mildew. Va., Fla.*Plasmodiophora brassicae* Wor., clubroot. Conn., Mass., N. Y., Ohio, Miss.*B. oleracea gemmifera*, Brussels sprouts.*Bacillus carotovorus* L. R. Jones (*Erwinia carotovora* (Jones) Com. S. A. B.), soft-rot. Minn.*Corticium vagum* Berk. and Curt., stem-rot. La.*Mycosphaerella brassicicola* (Fr.) Lindau, ring-spot. Calif.*Phoma lingam* (Tode) Desm., black-leg. N. Y.*Plasmodiophora brassicae* Wor., clubroot. Alaska.*Pythium debaryanum* Hesse, damping-off. Minn.*Sclerotinia sclerotiorum* (Lib.) Mass., drop, watery soft-rot. La.*B. pekinensis*, pe-tsai cabbage, Chinese cabbage.*Alternaria brassicae* (Berk.) Sacc., black leaf-spot. Conn., Fla.*A. herculea* (Ell. and Mart.) J. A. Elliott, gray leaf-spot. Fla., Calif.*Bacillus carotovorus* L. R. Jones (*Erwinia carotovora* (Jones) Com. S. A. B.), soft-rot. Conn.*Bacterium campestre* (Pam.) EFS. (*Phytomonas campestre* (Pam.) Com. S. A. B.), black-rot. Md.*Cercospora bloxami* Berk. and Br., leaf-spot. Fla.*Cercospora albo-maculans* (Ell. and Ev.) Sacc., leaf-spot. Conn.*Cylindrosporium brassicae* Fautr. and Roum., leaf-spot. Md., Mo.*Sclerotinia sclerotiorum* (Lib.) Mass., drop. Mass.

Mosaic, undet.

B. rapa, turnip (white).*Albugo candida* (Pers.) O. Kuntze, white-rust. Reported in seven scattered States.*Alternaria* sp., black leaf-spot. Ind., Tex., Utah.*A. herculea* (Ell. and Mart.) J. A. Elliott, gray leaf-spot. N. J., Ohio, Fla., Ala.*Bacillus carotovorus* L. R. Jones (*Erwinia carotovora* (Jones) Com. S. A. B.), soft-rot. Reported from widely scattered States.*Bacterium campestre* (Pam.) EFS. (*Phytomonas campestre* (Pam.) Com. S. A. B.), black-rot. Eastern States.*Cercospora albo-maculans* (Ell. and Ev.) Sacc., leaf-spot. General.*Colletotrichum brassicae* Schultz. and Sacc., leaf-spot. Ga.*C. higginsianum* Sacc., leaf-spot. S. C., Ga., Fla., Ala., Miss.*Corticium vagum* Berk. and Curt., stem-rot. Mass., Ohio, Wash.*Cylindrosporium brassicae* Fautr. and Roum., leaf-spot. Ga.*Erysiphe polygoni* DC., powdery mildew. Occurs in widely scattered States.*Fusarium conglutinans* Woll., yellows. Ind.*Heterodera radicolica* (Greef) Muell., root-knot. S. C., Ga., Ala., Tex.*Peronospora parasitica* (Pers.) D By., downy mildew. Frequent east of Great Plains.*Phoma napobrassicae* Rostr., root-rot. Conn.*Plasmodiophora brassicae* Wor., clubroot. East of Great Plains; Colo., Wash.; especially in Northeastern States.*Sclerotinia sclerotiorum* (Lib.) Mass., drop, watery soft-rot. Conn., Tex.

Mosaic, undet. Ind.

BROMUS*B. inermis*, *Hungarian brome-grass.*Bacterium coronafaciens atropurpureum* C. S. Reddy and James Godkin, bacterial blight. Wis., N. Dak., S. Dak.*Claviceps purpurea* (Fr.) Tul., ergot. Conn., Minn., Iowa, N. Dak., Nebr.*Erysiphe graminis* DC., powdery mildew. Minn.*Helminthosporium giganteum* Heald and Wolf, leaf-spot. D. C.*Phyllachora graminis* (Pers.) Fckl., tar-spot. N. Dak.*Pyrenophora bromi* (Died.) Drechs., leaf-blotch. Pa., Wis., Minn., N. Dak.*Rhynchosporium secalis* (Oud.) Davis, scald. Wis.*Septoria bromi* Sacc., leaf-blotch. Wis.*S. bromigena* Sacc., leaf-spot. N. Dak.*Ustilago bromivora* (Tul.) Fisch., smut. Iowa, Oreg.

BROMUS—Continued.**B. secalinus*, chess.

- Colletotrichum graminicolum* (Ces.) Wils., anthracnose. Pa., Ohio.
Ophiobolus graminis Sacc., take-all. N. Y.
Puccinia clematidis (DC.) Lagh., leaf-rust. N. C., Ind., Oreg., Calif.
P. graminis Pers., stem-rust. W. Va., Ind., Wis., Iowa, Kans.
Septoria bromi Sacc., leaf-blotch. Wis.
Ustilago bromivora (Tul.) Fisch., smut. Pacific coast.

BUDDLEIA.

Buddleia sp., butterflybush.

Heterodera radiculicola (Greef) Muell., root-knot. Miss.

***BULBILIS.**

B. dactyloides, buffalo grass.

- Cercospora seminalis* Ell. and Ev., leaf-spot. S. Dak., Kans., Colo.
Helminthosporium turcicum Pass., leaf-blight. Kans.
Puccinia kansensis Ell. and Barth., rust. Nebr., Kans.
Tilletia buchloeana Kell. and Syd., covered smut. Tex., Kans.
Ustilago buchloes Ell. and Tr., loose smut. Nebr., N. Mex.

BUMELIA.

Bumelia sp., bumelia.

- Cercospora lanuginosa* Heald and Wolf, leaf-spot. Texas.
Phyllosticta bumeliifolia Heald and Wolf, leaf-spot. Ala., Miss., Tex.
P. curtisii (Sacc.) Ell. and Ev., leaf-spot. Fla.
Septoria bumeliae Sacc., leaf-spot. Miss.

BUXUS.

B. sempervirens, box.

- Macrophoma candollei* (Berk. and Br.) Berl. and Vogl., leaf-blight. East of Miss. River.
Nectria rousSELLIANA Tul., canker. N. J., Pa., Md.
Phyllosticta sp., leaf-spot. N. Y.
P. auerswaldii Allesch., leaf-spot. N. J.

CAJANUS.

C. indicus, pigeon-pea.

Uromyces dolicholi Arth., rust. Fla.

CALENDULA.

C. officinalis, calendula.

- Corticium vagum* Berk. and Curt., stem-rot. Ind.
Heterodera radiculicola (Greef) Muell., root-knot. W. Va.
Puccinia emiliae P. Henn., rust. Ill., Mo., Nebr., Kans.

CALLICARPA.

C. americana, American beautyberry.

- Cercospora callicarphae* Cke., leaf-spot. Gulf States.
Meliola cookeana Speg., sooty mold. Fla.

CALLISTEPHUS.

C. chinensis, China-aster.

- Botrytis* sp., stem-blight. Conn., Pa.
Coleosporium solidaginis (Schw.) Thuem., rust. Frequent east of Great Plains.
Corticium vagum Berk. and Curt., stem-rot. Me., Mass., N. Y., Mich., Wash.
Erysiphe cichoracearum DC., powdery mildew. Minn., Wash.
Fusarium conglutinans callistephi Beach, wilt. General in Northern States.
Heterodera radiculicola (Greef) Muell., root-knot. Conn., W. Va.
Septoria callistephi W. O. Gloyer, leaf-spot. N. Y., Del., Ala., Ohio, Mich.
 Yellows, undet. General in Northern States.

CANNA.*C. indica*, canna.

- Bacterium cannae* M. K. Bryan (*Phytomonas cannae* (Bryan) Com. S. A. B.),
bacterial bud-rot. Conn., Ind.
Fusarium sp., rot. Pa., Minn.
Puccinia cannae (Wint.) P. Henn., rust. Ohio, Fla.

CANNABIS.*C. sativa*, common hemp.

- Botryosphaeria marconi* (Cav.) V. K. Charles and A. Jenkins, wilt. Va.
Botrytis cinerea Auct., rot. Va., Oreg.
Ozonium omnivorum Shear (*Phymatotrichum omnivorum* (Shear) Dug.), root-rot. Tex.
Sclerotium rolfsii Sacc., stem-rot. S. C.
Septoria cannabina Pk., leaf-spot. Iowa.
S. cannabis (Lasch) Sacc., leaf-spot. Ind., Ky., Minn.

CAPRIOLA.*C. dactylon*, Bermuda grass.

- Helminthosporium cynodontis* G. B. Marignoni, leaf-spot. Fla.
H. giganteum Heald and Wolf, leaf-spot. Fla., Tex.
Puccinia cynodontis DeLac., rust. Frequent in Southern States.
Ustilago cynodontis P. Henn., smut. Tex., Calif.

CAPSICUM.*C. annuum*, redpepper.

- Alternaria* sp., fruit-rot. Frequent, especially in the South.
Bacillus carotovorus L. R. Jones (*Erwinia carotovora* (Jones) Com. S. A. B.),
soft-rot. Fla., Mich.
Bacterium solanacearum EFS. (*Phytomonas solanaceara* (EFS.) Com. S. A. B.),
bacterial wilt. Pa., Va., N. C., La., Tex.
B. vesicatorium E. M. Doidge (*Phytomonas exitiosa* (Gardner and Kendrick)
Com. S. A. B.), bacterial spot. Tenn., Ga., Fla., Ind.
Cercospora capsici Heald and Wolf, leaf and fruit spot. Ga., Fla., Tex.,
Calif.
Corticium vagum Berk. and Curt., stem-rot. Conn., N. J., Pa., Ga., La.
Fusarium sp., wilt. Del., Tenn., Ark., Calif.
F. annuum L. H. Leonian, wilt. N. Mex.
Glomerella cingulata (Ston.) Spauld. and Schrenk, anthracnose. General
east of Miss. River, especially in the South; Tex.
Heterodera radicum (Greef) Muell., root-knot. Fla., N. Mex.
Ozonium omnivorum Shear (*Phymatotrichum omnivorum* (Shear) Dug.),
root-rot. Tex.
Phoma destructiva Plow., rot. Ga.
Phyllosticta sp., leaf-spot. N. J.
Phytophthora capsici L. H. Leonian, blight. N. Mex.
P. terrestris Sherb., fruit-rot. Ind.
Pythium debaryanum Hesse, fruit-rot. N. C.
Sclerotinia sclerotiorum (Lib.) Mass., damping-off. Conn.
Sclerotium bataticola Taub., fruit-rot. N. J.
S. rolfsii Sacc., stem-rot. South Atlantic and Gulf States.
Blossom-end rot, nonpar. Ga.
Mosaic, undet. Frequent in widely scattered States.
Sun scald, undet. N. J., Ind., Calif.

CARICA.*C. papaya*, papaya.

- Colletotrichum* sp., fruit-rot. Fla.
Heterodera radicum (Greef) Muell., root-knot.
Oidium caricae F. Noack, powdery mildew. Fla.

CARPINUS.*Carpinus* sp., hornbeam.

- Fomes igniarius* (L.) Fr., white heart-rot. Vt.
Fracchiæa calista (Berk. and Curt.) Sacc. Vt., Ala., Tex.
Gnomoniella fimbriata (Pers.) Sacc., leaf-spot. N. Y., W. Va.

CARPINUS—Continued.

C. caroliniana, American hornbeam, blue beech.

Dermatea carpinea (Pers.) Rehm, canker. N. Y., Pa.

Fusarium carpineum Davis. Wis.

Gloeosporium robergei Desm., leaf-spot. Pa.

Gnomoniella fimbriata (Pers.) Sacc., leaf-spot. N. Y.

Microsphaeraalni (Wallr.) Wint., powdery mildew. Ind., Iowa.

Phyllactinia corylea (Pers.) Karst., powdery mildew. Ohio, Ind., Tex.

Phyllosticta hesperidearum (Catt.) Penz., leaf-spot. Colo. (greenhouse).

Septoria carpinea Davis, leaf-spot. Wis.

CASTANEA.

C. dentata, chestnut.

Endothia parasitica (Murr.) P. J. and H. W. Anderson, blight. New England, N. Y., Atlantic Coast States except Florida; also W. Va., Ky., Tenn., Ala., Ohio, Ind., Mich., Iowa, Mo., Nebr.

Fusicoccum sp., canker. Calif. (*Castanea* sp.).

Marssonina ochroleuca (Berk. and Curt.) Humph., leaf-spot. Me. to N. C., Ohio.

Melanconis modonia Tul., black canker. Ohio.

Microsphaeraalni (Wallr.) Wint., powdery mildew. Conn., N. Y., Pa.

Monochaetia desmazierii Sacc., large leaf-spot. Va., N. C., Ga.

Phoradendron flavescens (Pursh) Nutt., mistletoe. Eastern States.

Phyllactinia corylea (Pers.) Karst., powdery mildew. Mass., N. Y., Ind.

Phyllosticta castanea Ell. and Ev., leaf-spot. Md., W. Va.

P. fusispora Ell. and Ev., leaf-spot. Ala.

Phyalospora malorum (Pk.) Shear (*P. cydoniae* Am. Auct.), twig-blight. Central Eastern States.

Polyporus croceus Fr., white-piped rot. Eastern States.

P. frondosus Fr., straw-colored rot.

P. spraguei Berk., heart-rot. Ind.

P. sulphureus (Bull.) Fr., brown-checked wood-rot. N. Y.

Septoria ochroleuca Berk. and Curt., leaf-spot. Mass., Kans.

Strumella coryneoidea Sacc. and Wint., canker. Northeastern States.

C. japonica, Japanese chestnut.

Endothia parasitica (Murr.) P. J. and H. W. Anderson, blight. Middle Atlantic States, Mass., Conn., N. Y., W. Va., N. C.

Septoria gilletiana Sacc., leaf-spot. La.

C. pumila, chinquapin.

Endothia parasitica (Murr.) P. J. and H. W. Anderson, blight. N. H., Conn., Pa., Md., Va., W. Va., Tenn., S. C., Ga.

Microsphaeraalni (Wallr.) Wint., powdery mildew. Va., N. C.

Polyporus croceus Fr., white-piped rot. Ark.

C. sativa, Spanish chestnut.

Endothia parasitica (Murr.) P. J. and H. W. Anderson, blight. Middle Atlantic States, Conn., N. Y., Ohio.

Marssonina ochroleuca (Berk. and Curt.) Humph., leaf-spot. Conn., N. J.

Microsphaeraalni (Wallr.) Wint., powdery mildew. Mass.

Ozonium omnivorum Shear (*Phymatotrichum omnivorum* (Shear) Dug.), root-rot. Tex.

Phyllactinia corylea (Pers.) Karst., powdery mildew. Ohio.

CASTANOPSIS.

C. chrysophylla, giant chinquapin.

Dothidella castanopsidis Dearn., leaf-spot. Oreg.

CATALPA.

Catalpa sp., catalpa.

Cercospora catalpae Wint., leaf-spot. Mass., N. J., Fla., Ala., La., Mo., Tex.

Cladosporium sp., leaf-spot. Ind.

Collybia velutipes Fr., heart-rot. Ind.

Gloeosporium catalpae Ell. and Ev., leaf-spot. N. Y., Pa.

Heterodera radicolica (Greef) Muell., root-knot. Ala., Fla.

Macrosporium catalpae Ell. and Mart., leaf-spot. Frequent east of Miss. River; Mo.

CATALPA—Continued.

Catalpa sp., catalpa—Continued.

- Microsphaera alni vaccinii* (Schw.) Salm., powdery mildew. General east of Great Plains.
Ozonium omnivorum Shear (*Phymatotrichum omnivorum* (Shear) Dug.), root-rot. Tex.
Phyllactinia corylea (Pers.) Karst., powdery mildew. S. C., Ohio, Ind., Ill.
Phyllosticta catalpae Ell. and Mart., leaf-spot. General east of Great Plains.
Polyporus catalpae Schrenk, brown butt-rot. Mass.
Polystictus versicolor (L.) Fr., yellowish wood-rot. Mass., Ohio, Ind., Nebr.
Thielavia basicola (Berk. and Br.) Zopf, black root-rot. Ohio.
 Mosaic, undet. Md.

CELASTRUS.

C. scandens, American bittersweet.

- Cercospora melanochaeta* Ell. and Ev., leaf-spot. N. Dak., Nebr., Kans.
Microsphaera alni (Wallr.) Wint., powdery mildew. Wis.
Phyllactinia corylea (Pers.) Karst., powdery mildew. General.
Phyllosticta celastri Ell. and Ev., leaf-spot. W. Va.
Ramularia celastri Ell. and Mart., leaf-spot. General.

CELTIS.

Celtis sp., hackberry, sugarberry.

- Cylindrosporium celtidis* Earle, leaf-spot. Ala.
C. defoliatum Heald and Wolf, leaf-blight. Tex.
Ozonium omnivorum Shear (*Phymatotrichum omnivorum* (Shear) Dug.), root-rot. Tex.
Phleospora celtidis Ell. and Mart., leaf-spot. Mass., Mo., Kans.
Phoradendron flavescens (Pursh) Nutt., mistletoe. Tex., Ind., Ariz.
Phyllosticta celtidis Ell. and Kell., leaf-spot. East of Great Plains; N. Mex.
Pseudoperonospora celtidis (M. B. Waite) Wils., downy mildew. D. C.
Ramularia celtidis Ell. and Kell., leaf-spot. Frequent east of Great Plains.
Septogloeum celtidis Dearn., leaf-spot. N. Y.
Septoria celti-gallae W. R. Gerard, leaf-spot. N. Y.
S. gigaspora Ell. and Ev., leaf-spot. Mass., Kans.
Sphaerotheca phytophila Kell. and Sw., powdery mildew. East of Great Plains.
Uncinula confusa Mass., powdery mildew. N. C.
U. parvula Cke. and Pk., powdery mildew. General.
U. polychaeta (Berk. and Curt.) Ell., powdery mildew. Mass., Ala., Miss., Tex.

CEPHALANTHUS.

C. occidentalis, buttonbush.

- Ascochyta cephalanthi* Ell. and Ev., leaf-spot. La.
Cercospora perniciosus Heald and Wolf, leaf-blight. Tex.
Coniothyrium cephalanthi Ell. and Ev., leaf-spot. La.
Microsphaera alni (Wallr.) Wint., powdery mildew. N. H., Ala., Ind., Ill.
Phyllactinia corylea (Pers.) Karst., powdery mildew. Ind.
Phyllosticta cephalanthi Tharp, leaf-spot. Tex.
Puccinia cephalanthi (Seym.) Barth., rust. N. Y., Ind., Ill., Kans.
Ramularia cephalanthi (Ell. and Kell.) Heald, leaf-spot. Southern States.
Septoria cephalanthi Ell. and Kell., leaf-spot. Kans.

CERCIS.

C. canadensis, redbud, *Judas-tree.

- Cercospora cercidicola* Ell., leaf-spot. General throughout range of host.
C. chionea Ell. and Kell., leaf-spot. Ind., Ill., Kans.
Pestalozzia sp., leaf-spot. Fla.
Phyllosticta cercidicola Ell. and Ev., leaf-spot. W. Va., Ind.
P. siliquastri Sacc. and Speg., leaf-spot. Ala.

**C. occidentalis*, California redbud.

- Cercospora cercidicola* Ell., leaf-spot. Tex.

CHAETOCHELOA.

C. italica, millet.

Helminthosporium sp., leaf-spot. Minn.

Piricularia grisea (Cke.) Sacc., leaf-spot. Pa., Va., Ala., Tex., Ind., Ill., Iowa, Mo.

Sclerospora graminicola (Sacc.) Schroet., downy mildew. North-Central States.

Ustilago crameri Koern., smut. General east of Great Plains.

CHAMAECYPARIS.

C. nootkatensis, *Alaska cedar, Nootka cypress.

Gymnosporangium nootkatensis (Trel.) Arth., rust. Wash., Oreg.

C. thyoides, whitecedar.

Gymnosporangium botryapites (Schw.) Kern, rust. Atlantic Coast States from Mass. to Ala.

G. ellisii (Berk.) Farl., rust. Atlantic Coast States from Mass. to Del.; also Fla. and Ala.

G. transformans (Ell.) Kern, rust. Mass., N. J.

CHAYOTA.

C. edulis, chayote.

Cercospora cucurbitae Ell. and Ev., leaf-spot. Fla.

Colletotrichum lagenarium (Pass.) Ell. and Hals., anthracnose. Fla.

CHENOPODIUM.

**C. ambrosioides anthelminticum*, wormseed.

Cercospora anthelmintica Atk., leaf-spot. Ala., Miss., Tex.

C. chenopodii Fr., leaf-spot. Tex.

Heterodera radicolica (Greef) Muell., root-knot. Ala.

Phyllosticta ambrosioides Thuem. and Syd., leaf-spot. Del., N. J., La., Ind.

CHIONANTHUS.

C. virginica, white fringetree.

Phyllactinia corylea (Pers.) Karst., powdery mildew. Md.

Phyllosticta chionanthi Thuem., leaf-spot. N. J., W. Va.

Septoria chionanthi Cke., leaf-spot. S. C.

S. eleospora Sacc., leaf-spot. Tex.

CHRYSANTHEMUM.

Chrysanthemum sp., chrysanthemum.

Aphelenchus sp., bud nema. Md.

Ascochyta chrysanthemi F. L. Stevens, ray-blight. N. C., S. C.

Botrytis sp., bud-rot. Mass., Ky., Minn., Mo.

B. cinerea Auct., flower deformation. N. Y.

Cercospora chrysanthemi Heald and Wolf., leaf-spot. Tex.

Corticium vagum Berk. and Curt., stem-rot. Md.

Cylindrosporium chrysanthemi Ell. and Dearn., leaf-spot. Mass., Conn., Pa., N. C., Ga., Miss.

Erysiphe cichoracearum DC., powdery mildew. General.

Fusarium sp., wilt. Mass., N. J., Ala., Fla., Ohio, Kans.

Heterodera radicolica (Greef) Muell., root-knot. Miss., Tex., Wash.

Ozonium omnivorum Shear (*Phymatotrichum omnivorum* (Shear) Dug.), root-rot. Tex.

Phyllosticta chrysanthemi Ell. and Dearn., leaf-spot. Mass., Fla.

Puccinia chrysanthemi Roze, rust. General.

Septoria chrysanthemella Cav., leaf-spot. General east of Great Plains.

S. leucanthemi Sacc. and Speg., leaf-spot. Conn.

Verticillium alboatrum Reinke and Berth., wilt. N. J.

Chlorosis, nonpar. Pa., Md.

Mosaic, undet. Md., Ohio.

Yellows, undet. Mich.

CICHORIUM.

C. endivia, endive.

Corticium vagum Berk. and Curt., damping-off. Conn.

Pythium debaryanum Hesse, root-rot. Conn.

Sclerotinia sclerotiorum (Lib.) Mass., watery soft-rot. La.

C. intybus, chicory.

Puccinia hieracii (Schum.) Mart., rust. Vt., N. Y., Wis., Wash., Oreg.

CINNAMOMUM.

C. camphora, camphor-tree.

Diplodia sp., canker. Tex.

Gloeosporium camphorae Sacc., leaf-spot. Fla., Ala., Miss., Tex.

Glomerella cingulata (Ston.) Spauld. and Schrenk, anthracnose. Ga., Fla.

Tylenchus penetrans Cobb, nematode. Fla.

CITRULLUS.

C. vulgaris, watermelon.

Bacillus tracheiphilus EFS. (*Erwinia tracheiphila* (EFS.) Com. S. A. B.), bacterial wilt. General.

Cercospora citrullina Cke., leaf-spot. Ind. to Tex. and eastward.

Colletotrichum lagenarium (Pass.) Ell. and Hals., anthracnose. General east of Rocky Mts.; also in Calif.

Corticium vagum Berk. and Curt., fruit-rot. La., Wash., Oreg.

Diplodia sp., Diplodia rot. Southern States.

Erysiphe cichoracearum DC., powdery mildew. Va.

Fusarium sp., Fusarium rot. Va., Kans.

F. niveum EFS., wilt. Southern two-thirds of United States.

Heterodera radicola (Greef) Muell., root-knot. S. C., Ala., Tex., Calif.

Macrosporium cucumerinum Ell. and Ev., leaf-blight. Occurs scatteringly, mostly east of Rocky Mts.

M. sarcinula parasiticum Thuem., leaf-spot. Kans.

Mycosphaerella citrullina (C. O. Smith) Gross., gummy stem-blight. N. Y., Va., S. C., Tenn., Fla., La., Mo.

Pseudoperonospora cubensis (Berk. and Curt.) Rostew., downy mildew. Atlantic Coast and Gulf States; W. Va., Ohio, Mich., Ark., Calif.

Pythium sp., blossom-end rot. Va.

P. aphanidermatum (Edson) Fitz., rot.

P. debaryanum Hesse, rot. Va., Mich.

Sclerotinia sclerotiorum (Lib.) Mass., watery soft-rot. N. J.

Sclerotium rolfsii Sacc., stem-rot. Southern States.

Septoria citrulli Ell. and Ev., leaf-spot. N. Y.

Thielavia basicola (Berk. and Br.) Zopf, black root-rot. Utah, Oreg.

Mosaic, undet. Del., Md., Mich.

CITRUS.

Citrus spp., citrus.

Tylenchus semipenetrans Cobb, nematode. Fla., Calif.

C. aurantifolia, lime.

Bacterium citri (Hasse) Jehle (*Phytomonas citri* (Hasse) Com. S. A. B.), citrus canker. Fla.

Colletotrichum gloeosporioides Penz. (*Glomerella cingulata* (Ston.) Spauld. and Schrenk), associated with citrus wither-tip. Fla.

Gloeosporium limeticolum R. F. Clausen, lime wither-tip. Fla.

Phytophthora terrestris Sherb., foot-rot. Fla.

Sphaeropsis tumefaciens Hedges, knot. Fla.

Sporotrichum citri Butl. (*Sphaceloma fawcettii* A. Jenkins), scab. Fla.

C. aurantium, sour, or Seville, orange.

Armillaria mellea (Vahl) Quel., root-rot. Calif.

Bacterium citrarefaciens H. A. Lee (*Phytomonas citrarefaciens* (Lee) Com. S. A. B.), citrus blast. Calif.

B. citri (Hasse) Jehle (*Phytomonas citri* (Hasse) Com. S. A. B.), citrus canker. Fla., Miss.

Colletotrichum gloeosporioides Penz. (*Glomerella cingulata* (Ston.) Spauld. and Schrenk), associated with citrus wither-tip. Fla., Tex., Calif.

Gloeosporium intermedium Sacc., anthracnose. Fla.

CITRUS—Continued.

C. aurantium, sour, or Seville, orange—Continued.

- Penicillium glaucum* Lk., blue-mold rot. La.
Phomopsis citri Fawc., stem-end rot, melanose. Fla., Ala.
Phytophthora terrestris Sherb., foot-rot. Fla.
Sporotrichum citri Butl. (*Sphaceloma fawcettii* A. Jenkins), scab. Gulf States.
 Chlorosis, undet. Calif.
 Die-back, undet. Fla.

C. grandis, grapefruit.

- Bacterium citrarefaciens* H. A. Lee (*Phytomonas citrarefaciens* (Lee) Com. S. A. B.), citrus blast. Calif.
B. citri (Hasse) Jehle (*Phytomonas citri* (Hasse) Com. S. A. B.), citrus canker. Fla., Ala., La., Miss.
Cephaleuros virescens Kze., algal leaf-spot. Fla.
Colletotrichum gloeosporioides Penz. (*Glomerella cingulata* (Ston.) Spauld. and Schrenk), associated with citrus wither-tip. Fla., Ala., Tex., Miss.
Diplodia natalensis Ev., stem-end rot. Fla.
Phomopsis citri Fawc., stem-end rot, melanose. Fla., Tex., Ariz.
Pythiacystis citrophthora E. H. and R. E. Smith, brown-rot. Ariz.
Sclerotium rolfsii Sacc., seedling blight (greenhouse). Ala.
Sporotrichum citri Butl. (*Sphaceloma fawcettii* A. Jenkins), scab. Fla., Ala.
Tylenchus semipenetrans Cobb, root nematode. Fla., Calif.
 Die-back, undet. Fla.
 Gummosis, undet. Fla.

C. limonia, lemon.

- Alternaria* sp., fruit-rot. Calif.
Armillaria mellea (Vahl) Quel., root-rot. Calif.
Bacterium citrarefaciens H. A. Lee (*Phytomonas citrarefaciens* (Lee) Com. S. A. B.), citrus blast. Calif.
B. citri (Hasse) Jehle (*Phytomonas citri* (Hasse) Com. S. A. B.), citrus canker. Fla., Ala., La., Tex.
Botrytis cinerea Auct., gray-mold rot. Calif.
Colletotrichum gloeosporioides Penz. (*Glomerella cingulata* (Ston.) Spauld. and Schrenk), associated with citrus wither-tip. Fla., Tex.
Gloeosporium spagazzinii Sacc., leaf-scorch. Fla.
Oospora citri-aurantii C. O. Smith, sour-rot. Calif.
Penicillium sp., blue-mold rot. Calif.
Phomopsis californica Fawc., rot. Calif.
P. citri Fawc., stem-end rot, melanose. Fla.
Phyllosticta hesperidearum (Catt.) Penz., leaf-spot. Colo. (greenhouse).
Phytophthora terrestris Sherb., foot-rot. Fla.
Pythiacystis citrophthora E. H. and R. E. Smith, brown-rot. N. J. (greenhouse), Calif.
Sclerotinia sclerotiorum (Lib.) Mass., cottony rot. Calif.
Sporotrichum citri Butl. (*Sphaceloma fawcettii* A. Jenkins), scab. Fla.
 Die-back, undet. Fla.
 Gummosis, undet. Calif.
 Internal decline, nonpar. Calif.

C. nobilis, king orange, tangerine.

- Bacterium citri* (Hasse) Jehle (*Phytomonas citri* (Hasse) Com. S. A. B.), citrus canker. Tex.
Colletotrichum gloeosporioides Penz. (*Glomerella cingulata* (Ston.) Spauld. and Schrenk), associated with citrus wither-tip. Miss., Calif.
Oidium tingitaninum C. N. Carter, powdery mildew. Calif.
Phomopsis citri Fawc., stem-end rot, melanose. Fla.
Sporotrichum citri Butl. (*Sphaceloma fawcettii* A. Jenkins), scab. Fla., Miss.
 Die-back, undet. Fla.

C. nobilis unshiu, Satsuma orange.

- Alternaria citri* N. B. Pierce, black-rot. Ala., Calif.
Bacterium citri (Hasse) Jehle (*Phytomonas citri* (Hasse) Com. S. A. B.), citrus canker. Fla.
Colletotrichum gloeosporioides Penz. (*Glomerella cingulata* (Ston.) Spauld. and Schrenk), associated with citrus wither-tip. Ala.
Diplodia natalensis Ev., stem-end rot. Ala., Miss.
Oospora sp., soft-rot. Ala., Miss.

CITRUS—Continued.

C. nobilis unshiu, Satsuma orange—Continued.

Penicillium digitatum (Fr.) Sacc., green-mold rot. Ala.

P. italicum C. Wehmer, blue-mold rot. Ala.

Phomopsis citri Fawc., melanose, stem-end rot. Fla., Ala., Miss

Die-back, undet. Fla.

Gummosis, undet. Fla.

C. sinensis, orange.

Alternaria citri N. B. Pierce, black-rot. Fla., Ariz., Calif.

Bacterium citrarefaciens H. A. Lee (*Phytomonas citrarefaciens* (Lee) Com. S. A. B.), citrus blast. Calif.

B. citri (Hasse) Jehle (*Phytomonas citri* (Hasse) Com. S. A. B.), citrus canker. Gulf States.

Cerospora aurantia Heald and Wolf, leaf-spot. Tex.

Colletotrichum gloeosporioides Penz. (*Glomerella cingulata* (Ston.) Spauld. and Schrenk), die-back, associated with citrus wither-tip. Gulf States.

Diplodia natalensis Ev., stem-end rot. Fla.

Fusarium limonis Briosi, foot-rot. Ala.

Oospora sp., soft-rot. La.

Penicillium sp., blue-mold. General.

Phomopsis citri Fawc., melanose, stem-end rot. Fla., Ala., Miss., La.

Phyllosticta adusta Ell. and Mart., leaf-spot. Fla.

Phytophthora terrestris Sherb., foot-rot. Fla.

Pythiacystis citrophthora E. H. and R. E. Smith, brown-rot. Ariz.

Sclerotinia sp., Calif.

Septobasidium sp., girdle. Fla., La.

Sporotrichum citri Butl. (*Sphaceloma fawcettii* A. Jenkins), scab. Fla., Miss., Tex.

Stemphylium citri F. Patterson and V. K. Charles, end-rot. Ariz.

Tylenchus semipenetrans Cobb, root nematode. Fla., Calif.

Chlorosis, undet. Fla., Calif.

Die-back, undet. Miss., Calif.

Greasy spot, undet. Fla.

Gummosis, undet. Fla., Calif.

Mottled-leaf, frenching, undet. Fla., Miss., Calif.

Psoriasis, California scaly bark, undet. Fla., Ariz., Calif.

Scaly bark, attributed to *Cladosporium herbarum citricolum* Fawc. Fla.

C. trifoliata, hardy orange.

Bacterium citri (Hasse) Jehle (*Phytomonas citri* (Hasse) Com. S. A. B.) citrus canker. Ala., Fla.

Colletotrichum gloeosporioides Penz. (*Glomerella cingulata* (Ston.) Spauld. and Schrenk), associated with citrus wither-tip. Fla., Tex.

Diplodia aurantii Catt., twig-blight. Tex.

Phoma sp., damping-off. Tex.

Phomopsis citri Fawc., melanose. Fla., Miss.

Die-back, undet. Fla.

CLEMATIS.

Clematis sp., clematis, virgins-bower.

Ascochyta clematidina (Thuem.) emend. W. O. Gloyer, stem-rot and leaf-spot. N. Y., Wis.

Bacterium tumefaciens EFS. and Town. (*Phytomonas tumefaciens* (EFS. and Town.) Com. S. A. B.), crown-gall. Minn.

Cercospora rubigo Cke. and Hark., leaf-spot. Wash., Calif.

C. squalidula Pk., leaf-spot. Frequent in widely scattered States.

Cylindrosporium clematidis Ell. and Ev., leaf-spot. Conn., N. Y., Del., Miss., Wis.

Erysiphe polygoni DC., powdery mildew. Frequent in widely scattered States.

Heterodera radicolica (Greef) Muell., root-knot. Ala., Ohio, Wash., Oreg.

Phleospora adusta Heald and Wolf, leaf-blight. Tex.

Puccinia clematidis (DC.) Lagh., rust. General.

P. stromatica Berk. and Curt., rust. Ala.

Ramularia clematidis Dearn. and Barth., leaf-spot. Mont.

Septoria jackmani Ell. and Ev., leaf-spot. N. Y.

COCOS.

C. nucifera, coconut.

Alternaria sp., leaf-spot. Fla.

Colletotrichum sp., anthracnose. Fla.

Cytospora palmarum Cke., leaf-spot. Fla.

Diplodia epicocos Cke., stem-rot. Fla.

Fusarium sp., dry-rot. Fla.

Gloeosporium nanoti Prill. and Del., anthracnose. Fla.

Pestalozzia palmarum Cke., leaf-spot. Fla.

Phytophthora faberi Maub., bud-rot. Fla.

Pythium sp., wilt. Fla.

Ramularia sp., leaf-spot. Fla.

Thielaviopsis paradoxa (DeSeyn.) Hoehn., root-rot. Fla.

COFFEA.

C. arabica, coffee.

Glomerella cingulata (Ston.) Spauld. and Schrenk, anthracnose. Greenhouse, D. C.

Stilbum flavidum Cke., leaf-spot. Fla.

COLOCASIA.

C. esculenta, dasheen.

Bacillus carotovorus L. R. Jones (*Erwinia carotovora* (Jones) Com. S. A. B.), soft-rot. Storage.

Diplodia spp., Java black-rot. Storage.

Fusarium solani (Mart.) Sacc., associated with various rots. Fla.

Heterodera radicolica (Greef) Muell., root-knot. Fla.

Sclerotium rolfsii Sacc., storage rot.

COMPTONIA.

C. asplenifolia, sweetfern.

Cronartium comptoniae Arth., rust. N. H., Vt., N. Y. to N. C., Wis.

CORNUS.

Cornus spp., dogwood.

Ascochyta cornicola Sacc., leaf-spot. Ohio, Wis.

Botrytis sp., twig-blight. Pa.

Cercospora cornicola Tr. and Earle, leaf-spot. Ga., Fla., Miss., Tex.

Diaporthe albocarnis Ell. and Ev., canker. Colo.

Dimerosporium pulchrum Sacc., sooty mold. Miss., Tex., Ill., Iowa.

Microsphaera alni (Wallr.) Wint., powdery mildew. Frequent in North-eastern States.

Myxosporium nitidum Berk. and Curt., twig-blight. Frequent in North-eastern States.

Phoma corni Fekl., canker. Minn.

Phyllactinia corylea (Pers.) Karst., powdery mildew. General.

Phyllosticta corni West., leaf-spot. W. Va.

P. globifera Ell. and Ev., leaf-spot. Kans.

Physalospora corni Ell. and Ev. Colo.

Septoria cornicola Desm., leaf-spot. General.

C. florida, flowering dogwood.

Cercospora cornicola Tr. and Earle, leaf-spot. Miss.

Ozonium omnivorum Shear (*Phymatotrichum omnivorum* (Shear) Dug.), root-rot. Tex.

Phyllactinia corylea (Pers.) Karst., powdery mildew. S. C., Ala., Ind., Ill., Iowa.

Phyllosticta globifera Ell. and Ev., leaf-spot. Del., W. Va.

P. starbaeckii Sacc. and Syd., leaf-spot. Pa.

Septoria cornicola Desm., leaf-spot. Pa., S. C., Ind., Ky.

C. nuttalli, Pacific dogwood.

Fomes ignarius Fr., white wood-rot.

Nectria galligena Bres., European canker. Wash., Oreg.

Phyllactinia corylea (Pers.) Karst., powdery mildew. Wash., Oreg.

CORYLUS.

Corylus sp., filbert, hazelnut.

Bacterium sp., blight. Oreg.

Cryptosporella anomala (Pk.) Sacc., blight. Conn. to N. C.

Cylindrosporium vermiforme Davis, leaf-spot. Wis.

Gloeosporium coryli Ell. and Ev., leaf-spot. Me., N. J., Pa., Wash., Oreg.

Gnomoniella coryli (Batsch) Sacc., leaf-spot. General in Northern States.

Microsphaera alni (Wallr.) Wint., powdery mildew. Conn., Ill., Iowa, N. Dak.

Phyllactinia corylea (Pers.) Karst., powdery mildew. Northeastern States.

Phyllosticta coryli West., leaf-spot. N. J., Ind., Iowa, Mo.

Septogloeum profusum (Ell. and Ev.) Sacc., leaf-spot. Miss.

Septoria corylina Pk., leaf-spot. Mass., N. Y., Mich., Pacific coast.

Taphrina coryli T. Nishida, leaf-curl. Pa., Wis.

COSMOS.

Cosmos sp., cosmos.

Bacterium solanacearum EFS. (*Phytophthora solanacearum* (EFS.) Com. S. A. B.), bacterial wilt. N. C.

Erysiphe cichoracearum DC., powdery mildew. Nebr.

Phomopsis stewartii Pk., stem canker. Ohio, Mich., S. Dak.

Mosaic, undet. Fla.

CRATAEGUS.

Crataegus spp., hawthorn.

Bacillus amylovorus (Burr.) Trev. (*Erwinia amylovora* (Burr.) Com. S. A. B.), blight. Conn., N. Y., Ill., Utah, Wash., Oreg.

Cercospora crataegi Heald and Wolf, leaf-spot. Tex.

Cercospora mirabilis Pk., leaf-spot. Colo.

Cladosporium carpophilum Thuem., scab. Iowa.

Cylindrosporium brevispina Dearn., leaf-spot. Mont., Idaho, Calif.

C. crataegi Ell. and Ev., leaf-spot. W. Va.

Fabrea maculata (Lév.) Atk., leaf-spot. General.

Fomes applanatus (Pers.) Wallr. (*Ganoderma applanatum* (Pers.) Pat.), white-streaked rot. Calif.

Gymnosporangium betheli Kern, rust. N. Mex., Northern Rocky Mt. States; Pacific Northwest.

G. blasdaleanum (Diet. and Holw.) Kern, rust. Oreg., Calif.

G. exiguum Kern, rust. Tex.

G. floriforme Thax., rust. Ala., Ark.

G. germinale (Schw.) Kern, rust. General east of Great Plains.

G. globosum Farl., rust. General east of Great Plains.

G. hyalinum (Cke.) Kern, rust. N. C. to Fla.

G. trachysorum Kern, rust. N. C., Ala., La., Miss., Tex.

G. tubulatum Kern, rust. Mont., Idaho.

Hendersonia crataegi Brenckle, leaf-spot. N. Dak.

H. foliorum Fekl., leaf-spot. Tex.

Phoradendron flavescens (Pursh) Nutt., mistletoe. Tex.

Phyllactinia corylea (Pers.) Karst., powdery mildew. N. Y., Fla., Ala., Ill., Iowa, Wash.

Phyllosticta crataegi (Cke.) Sacc., leaf-spot. N. Y., S. C., N. Dak., N. Mex.

P. grisea Pk., leaf-spot. N. Y.

P. solitaria Ell. and Ev., blotch. N. J.

Podosphaera oxyacanthae (DC.) D By., powdery mildew. East of Great Plains.

Venturia inaequalis (Cke.) Aderh., scab. N. Y.

CROTON.

Croton sp., croton.

Cercospora capitati Tharp, leaf-spot. S. C., Ala., Tex.

C. crotonis Ell. and Ev., leaf-spot. Kans.

C. maritima Tr. and Earle, leaf-spot. Miss.

Gloeosporium sp., leaf-spot. N. J.

Phakopsora crotonis (Burr.) Arth., rust. General in southern half of the United States.

Uromyces graminicola Burr., rust. Ill., Kans.

CUCUMIS.

C. melo, cantaloupe, muskmelon.

Bacillus melonis Gidd. (*Erwinia melonis* (Gidd.) Com. S. A. B.), soft-rot. Vt., Mass.

B. tracheiphilus EFS. (*Erwinia tracheiphila* (EFS.) Com. S. A. B.), bacterial wilt. General.

Cercospora cucurbitae Ell. and Ev., leaf-spot. Del.

Cladosporium cucumerinum Ell. and Arth., scab. Mass., Conn., N. J., Del., Ohio, Mich., Calif.

Colletotrichum lagenarium (Pass.) Ell. and Hals., anthracnose. General east of Great Plains.

Erysiphe cichoracearum DC., powdery mildew. Va., Fla.

Fusarium niveum EFS., wilt. General in southern half of the United States.

Heterodera radicolica (Greef) Muell., root-knot. General in sandy soils in Southern States.

Macrosporium cucumerinum Ell. and Ev., leaf-blight. General.

Mycosphaerella citrullina (C. O. Smith) Gross., gummy stem-blight. N. Y.

Phyllosticta cucurbitacearum Sacc., leaf-spot. Ohio.

Pseudoperonospora cubensis (Berk. and Curt.) Rostew., downy mildew.

General east of Great Plains, especially in Gulf and Atlantic Coast States.

Sclerotinia sclerotiorum (Lib.) Mass., timber rot. Mass.

Sclerotium rolfsii Sacc., stem-rot. South Atlantic and Gulf States.

Septoria cucurbitacearum Sacc., leaf-spot. N. Y., Wis.

Mosaic, undet. Frequent in widely scattered States.

C. sativus, cucumber.

Acremonium sp., leaf-blight. Mass., Ohio.

Bacillus sp., soft-rot. Fla.

B. melonis Gidd. (*Erwinia melonis* (Gidd.) Com. S. A. B.), soft-rot. Ala.

B. tracheiphilus EFS. (*Erwinia tracheiphila* (EFS.) Com. S. A. B.), bacterial wilt. General.

Bacterium lachrymans EFS. and Mary K. Bryan, angular leaf-spot. East of Great Plains; Colo., Calif. (in greenhouse).

Cercospora sp., leaf-spot. Ind.

Cladosporium cucumerinum Ell. and Arth., scab. General.

Colletotrichum lagenarium (Pass.) Ell. and Hals., anthracnose. East of Great Plains, Colo., Ariz., Calif.

Corticium vagum Berk. and Curt., stem-rot. Ohio, Wash.

Erysiphe cichoracearum DC., powdery mildew. Widespread, especially in Northern States.

Fusarium niveum EFS., wilt. Frequent east of Great Plains, especially in the South; N. Mex., Calif.

Heterodera radicolica (Greef) Muell., root-knot. In sandy soils in Southern States.

Macrosporium cucumerinum Ell. and Ev., leaf-blight. General.

Mycosphaerella citrullina (C. O. Smith) Gross., gummy stem-blight. Fla.

Phyllosticta cucurbitacearum Sacc., leaf-spot. Ohio.

Pseudoperonospora cubensis (Berk. and Curt.) Rostew., downy mildew.

General east of Great Plains, especially in Gulf and Atlantic Coast States; Calif.

Pythium aphanidermatum (Edson) Fitz., cottony leak. N. C., S. C.

P. debaryanum Hesse, damping-off. Mass., N. Y., Ohio, Mich., Minn.

Sclerotinia sclerotiorum (Lib.) Mass., timber rot. Widespread.

Sclerotium rolfsii Sacc., stem-rot. S. C.

Stemphylium cucurbitacearum Geo. Osner, leaf-spot. Ohio, Ind.

Mosaic, undet. General.

CUCURBITA.

Cucurbita sp., gourd.

Bacterium lachrymans EFS. and Mary K. Bryan, angular leaf-spot.

Cercospora cucurbitacea Ell. and Gall., leaf-spot. Ala.

Colletotrichum lagenarium (Pass.) Ell. and Hals., anthracnose. Ill.

Pseudoperonospora cubensis (Berk. and Curt.) Rostew., downy mildew. Ohio, Ind.

C. maxima, squash; *C. pepo condensa*, summer squash.

Bacillus tracheiphilus EFS. (*Erwinia tracheiphila* (EFS.) Com. S. A. B.), bacterial wilt. East of Great Plains; Colo., Calif.

CUCURBITA—Continued.

- C. maxima*, squash; *C. pepo condensata*, summer squash—Continued.
- Cercospora cucurbitae* Ell. and Ev., leaf-spot. N. J., Ohio.
- Choanephora cucurbitarum* (Berk. and Rav.) Thax., brown-rot, blossom blight. Mass., Conn., N. Y., N. C., S. C., Fla., Ohio, Tex.
- Cladosporium cucumerinum* Ell. and Arth., scab. Me.
- Colletotrichum lagenarium* (Pass.) Ell. and Hals., anthracnose. Mass., Conn., Pa., Md., Ohio, Minn.
- Corticium vagum* Berk. and Curt., stem-rot. Mass.
- Erysiphe cichoracearum* DC., powdery mildew. Conn., Del., N. Mex., Utah.
- Fusarium niveum* EFS., wilt. N. C., Tex., Ohio, Nebr., N. Mex., Ariz., Calif.
- Heterodera radicum* (Greef) Muell., root-knot. Tex.
- Macrosporium cucumerinum* Ell. and Ev., leaf-blight. N. Y., Minn.
- Ozonium omnivorum* Shear (*Phymatotrichum omnivorum* (Shear) Dug.), root-rot. Tex.
- Pseudoperonospora cubensis* (Berk. and Curt.) Rostew., downy mildew. Conn., Del., Va., S. C., Tex.
- Rhizopus* sp., black-mold rot. N. Y., Tex.
- Septoria cucurbitacearum* Sacc., leaf-spot. Ind.
- Mosaic, undet. Vt., Conn., N. J., Pa., La., Tex., Minn.
- C. pepo*, pumpkin.
- Bacillus tracheiphilus* EFS. (*Erwinia tracheiphila* (EFS.) Com. S. A. B.), bacterial wilt. Ohio, Calif.
- Botrytis cinerea* Auct., gray-mold rot. Tex.
- Cercospora cucurbitae* Ell. and Ev., leaf-spot. Del.
- Corticium vagum* Berk. and Curt., stem-rot. Tex.
- Erysiphe cichoracearum* DC., powdery mildew. Conn., Del., N. Mex., Calif.
- Heterodera radicum* (Greef) Muell., root-knot. La., Tex.
- Macrosporium cucumerinum* Ell. and Ev., leaf-blight. W. Va., Minn.
- Phyllosticta orbicularis* Ell. and Ev., leaf-spot. N. Y., Del.
- Pseudoperonospora cubensis* (Berk. and Curt.) Rostew., downy mildew. Conn., N. J., Va., Ohio.
- Septoria cucurbitacearum* Sacc., leaf-spot.

CUPRESSUS.

- C. arizonica*, Arizona cypress.
- Gymnosporangium cupressi* Long and L. N. Goodding, rust. Ariz.
- C. glabra*, smooth cypress.
- Ozonium omnivorum* Shear (*Phymatotrichum omnivorum* (Shear) Dug.), root-rot. Tex.
- Phoma* sp., nursery blight. Pa., Ill., Iowa, Nebr., Kans.

CYCAS.

- C. revoluta*, sago cycas.
- Ascochyta cycadina* G. Scalia, leaf-spot. Tex.

CYCLAMEN.

- Cyclamen* sp., cyclamen.
- Botrytis cinerea* Auct. Pa., Ohio, Calif.
- Glomerella cingulata* (Ston.) Spauld. and Schrenk, anthracnose. Mass., Va.
- Heterodera radicum* (Greef) Muell., root-knot. W. Va., Ohio, Ind., Nebr.
- Phoma cyclamenae* Hals., leaf-spot. Ohio.
- Phyllosticta cyclaminicola* Trel., leaf-spot. Ill.
- Ramularia cyclaminicola* Trel., leaf-spot. Ill., Minn.
- Thielavia basicola* (Berk. and Br.) Zopf, black root-rot. Conn.

CYDONIA.

- C. japonica*, flowering quince.
- Bacillus amylovorus* (Burr.) Trev. (*Erwinia amylovora* (Burr.) Com. S. A. B.), blight. Mich.
- Gymnosporangium blasdaleanum* (Diet. and Holw.) Kern, rust. Oreg.
- G. germinale* (Schw.) Kern, rust. Me., Conn., N. J.

CYDONIA—Continued.*C. oblonga*, common quince.

- Bacillus amylovorus* (Burr.) Trev. (*Erwinia amylovora* (Burr.) Com. S. A. B.), blight. General.
- Bacterium tumefaciens* EFS. and Town. (*Phytopomonas tumefaciens* (EFS. and Town.) Com. S. A. B.), crown-gall. N. J., Pa., Ohio, N. C., Tex., Wash., Oreg.
- Corticium stevensii* Burt (*Hypochnus ochroleucus* F. Noack), leaf-blight. N. C.
- Fabraea maculata* (Lév.) Atk., leaf-blight. General.
- Glomerella cingulata* (Ston.) Spauld. and Schrenk, bitter-rot. Mass., R. I., Pa., Va., W. Va., Mich., Ind., Kans.
- Gymnosporangium blasdaleanum* (Diet. and Holw.) Kern, rust. Oreg.
- G. clavariaeforme* (Jacq.) DC., rust. Me., N. H., Conn.
- G. germinale* (Schw.) Kern, rust. General east of Great Plains.
- G. nelsoni* Arth., rust. Colo.
- G. nidus-avis* Thax., rust. Conn., N. Y.
- Hendersonia cydoniae* Cke. and Ell., leaf-spot. Conn.
- Neofabraea malicorticis* (A. B. Cordley) Jack., anthracnose. Oreg.
- Ozonium omnivorum* Shear (*Phymatotrichum omnivorum* (Shear) Dug.), root-rot. Tex.
- Phoma cydoniae* Sacc., pale-rot. Ill., Mich.
- P. pomi* Pass., fruit-spot. N. H., N. J., Pa., Md.
- Phyllactinia corylea* (Pers.) Karst., powdery mildew. Va.
- Physalospora malorum* (Pk.) Shear (*P. cydoniae* Am. Auct.), black-rot. East of Great Plains.
- Podosphaera leucotricha* (Ell. and Ev.) Salm., powdery mildew. Wash.
- P. oxycanthae* (DC.) D By., powdery mildew. N. Y., Ill., Ind.
- Sclerotinia cinerea* (Bon.) Schroet. (*Monilia oregonensis* Barss and Posey), blossom blight. Wash., Oreg.
- S. fructicola* (Wint.) Rehm (*S. americana* (Wormald) Norton and Ezekiel), brown-rot. N. Y., W. Va., Oreg.

CYNARA.*C. scolymus*, globe artichoke.

- Botrytis cinerea* Auct., rot. N. Y., Calif. General with host.
- Cercospora obscura* Heald and Wolf, leaf-spot. Tex.
- Cladosporium* sp., leaf-blight. S. C.
- Corticium vagum* Berk. and Curt., stem-rot. Miss.
- Ozonium omnivorum* Shear (*Phymatotrichum omnivorum* (Shear) Dug.), root-rot. Tex.
- Sclerotium rolfsii* Sacc., stem-rot. Ga.

DACTYLIS.*D. glomerata*, orchard grass.

- Claviceps microcephala* (Wallr.) Tul., ergot. Ind., Alaska.
- C. purpurea* (Fr.) Tul., ergot. N. Y., Va., W. Va., Minn.
- Colletotrichum graminicolum* (Ces.) Wils., anthracnose. Pa., Miss., Ohio, Minn.
- Erysiphe graminis* DC., powdery mildew. N. Y., Pa., Minn., Idaho, Utah.
- Gibberella saubinetii* (Mont.) Sacc., scab. W. Va.
- Helminthosporium* sp., leaf-spot. Minn.
- Puccinia graminis* Pers., stem-rust. General.
- Rhynchosporium secalis* (Oud.) Davis, scald. Wis.
- Scolecotrichum graminis* Fckl., leaf-spot. Widespread.
- Uromyces dactylidis* Otth, leaf-rust. Va., N. C.
- Ustilago striaeformis* (West.) Niessl, stripe-smut. General.

DAHLIA.*Dahlia* sp., dahlia.

- Bacterium solanacearum* EFS. (*Phytopomonas solanaceara* (EFS.) Com. S. A. B.), bacterial wilt. N. C.
- Botrytis* sp., bud-rot. N. J., Pa., Mich.
- B. sp.*, storage root-rot. N. J.
- Corticium vagum* Berk. and Curt., stem-rot. Md.
- Erysiphe cichoracearum* DC., powdery mildew. Conn., Md., N. C., W. Va., Ohio, Wash., Calif.

DAHLIA—Continued.*Dahlia* sp., dahlia—Continued.

- E. polygoni* DC., powdery mildew. Del., Ga., Iowa, Mo., Calif.
Fusarium sp., wilt. N. J.
Heterodera radiculicola (Greef) Muell., root-knot. Miss., Calif.
Macrosporium sp., leaf-blight. Pa., Mo.
Phoma dahliae Berk., blight. Ohio.
Pythium debaryanum Hesse, damping-off. Conn., Wash.
Sclerotinia sclerotiorum (Lib.) Mass., stem-rot. Calif.
Sclerotium rolfsii Sacc., stem-rot. Fla.
Sporotrichum sp., root-rot. N. J.
Verticillium alboatrum Reinke and Berth., wilt.
 Mosaic or yellows, undet. Conn., Del.

DAUCUS.*D. carota*, carrot.

- Alternaria radicina* F. Meier, Drechs., and E. D. Eddy, black-rot. Mass., N. Y.
Bacillus carotovorus L. R. Jones (*Erwinia carotovora* (Jones) Com. S. A. B.), soft-rot. General, especially east of Rocky Mts.
Botrytis sp., gray-mold rot. Pa., Wash.
Cercospora sp., leaf-blight. Md.
C. apii carotae Pass., leaf-spot. N. Y., Pa., N. J., Md., Ohio, Ind., Mich., Mo.,
Corticium vagum Berk. and Curt., stem-rot. Mass., N. Y., Mich., Ill., Tex. Wash., Oreg.
Heterodera radiculicola (Greef) Muell., root-knot. Occurs in widely scattered States.
Macrosporium carotae Ell. and A. B. Langlois, leaf-blight. Occurs scatteringly in Eastern States.
Ozonium omnivorum Shear (*Phymatotrichum omnivorum* (Shear) Dug.), root-rot. Tex.
Rhizoctonia crocorum (Pers.) DC., violet root-rot. Wash.
Sclerotinia intermedia G. B. Ramsey, root-rot. Ill.
S. sclerotiorum (Lib.) Mass., watery soft-rot. Conn., N. Y., N. J., La., Miss., Ind., Ill.
Sclerotium rolfsii Sacc., stem-rot. S. C.

DELPHINIUM.*Delphinium* spp., larkspur.

- Bacterium delphinii* (EFS.) Bryan, black-spot. Me., N. H., Mass., Conn., N. Y., Pa., Ill., Oreg.
Botrytis sp., gray-mold. Conn.
Cercospora delphinii Thuem., leaf-spot. Colo.
Corticium vagum Berk. and Curt., stem-rot. N. Y., Mich.
Erysiphe polygoni DC., powdery mildew. Me., Conn., N. Y., Pa., Minn.
Fusarium sp., wilt. Fla.
Phyllosticta delphinii F. E. Clements, leaf-spot. Colo.
Puccinia clematidis (DC.) Lagh., rust. Nebr., Colo., Mont., Idaho, Oreg.
Sclerotium delphinii D. S. Welch, crown-rot. N. Y., Pa., N. J., Ind.
S. rolfsii Sacc., stem-rot. N. J., Fla., La., Ind., Ill.
Septoria delphinella Sacc., leaf-spot. Kans.
Urocystis sorosporioides Koern., smut. Calif.

DEUTZIA.*Deutzia* sp., deutzia.

- Cercospora deutziae* Ell. and Ev., leaf-spot. Del.
Heterodera radiculicola (Greef) Muell., root-knot. Miss.
Phyllosticta deutziae Ell. and Ev., leaf-spot. N. J.

DIANTHUS.*D. barbatus*, sweet-william.

- Corticium vagum* Berk. and Curt., stem-rot. Conn., N. Y.
Puccinia arenariae (Schum.) Wint., rust. Conn., Mass., N. Y., Pa., Miss.
Septoria dianthi Desm., leaf-spot. Ala.
Uromyces caryophyllinus (Schrank) Wint., rust. Nebr.

DIANTHUS—Continued.

D. caryophyllus, carnation.

- Alternaria dianthi* F. L. Stevens and J. G. Hall, leaf-spot. Occurs scatteringly in Eastern States.
Bacterium woodsii EFS., bacterial spot. Okla.
Botrytis sp., bud-blight. Conn., Pa., Ohio, Ill.
Corticium vagum Berk. and Curt., stem-rot. General.
Fusarium sp., wilt. Widespread.
Heterodera radicola (Greef) Muell., root-knot. Mass., N. C., S. C., Ohio, Tex., Oreg., Calif.
Heterosporium echinulatum (Berk.) Cke., leaf-spot. Conn., N. Y., Oreg., Calif.
Ozonium omnivorum Shear (*Phymatotrichum omnivorum* (Shear) Dug.), root-rot. Tex.
Septoria dianthi Desm., leaf-spot. Mass., Conn., N. Y., Del., S. C., Miss.
Sporotrichum anthophilum Pk., bud-rot. N. Y., N. J., Ind., Ill., Nebr.
S. poae Pk., bud-rot. Mass., Pa., N. J., Nebr.
Uromyces caryophyllinus (Schrank) Wint., rust. General.
Volutella dianthi (Hals.) Atk., anthracnose. Pa.

DIERVILLA.

D. trifida, bush-honeysuckle.

- Phyllosticta diervillae* Davis, leaf-spot. Wis.
Ramularia diervillae Pk., leaf-spot. N. H., N. Y., Wis.
Septoria diervillae Ell. and Ev., leaf-spot. Mass., Iowa, Minn., Wis.

DIGITALIS.

D. purpurea, foxglove.

- Colletotrichum* sp., anthracnose. Mass.
Phyllosticta digitalis A. Bellyneck, leaf-spot. N. Y., Alaska.

DIOSPYROS.

D. kaki, Japanese persimmon.

- Cercospora diospyri* Thuem., leaf-spot. S. C.
C. fuliginosa Ell. and Kell., leaf-spot. Fla., Tex., Ill.
C. kaki Ell. and Ev., leaf-spot. Ga., Ala., La., Tex.
Heterodera radicola (Greef) Muell., root-knot. Tex.
Ozonium omnivorum Shear (*Phymatotrichum omnivorum* (Shear) Dug.), root-rot. Tex.
Phyllosticta bififormis Heald and Wolf, leaf-spot. Tex.
Physalospora cydoniae Arn. (?), fruit-rot. Ala.
D. virginiana, common persimmon.
Cercospora atra Ell. and Ev., leaf-spot. Del.
C. diospyri Thuem., leaf-spot. General throughout range of host.
C. flexuosa Tr. and Earle, leaf-spot. Miss.
C. fuliginosa Ell. and Kell., leaf-spot. Ala., Kans., Tex.
C. virginiana Thuem., leaf-spot. Ala.
Gloeosporium diospyri Ell. and Ev., anthracnose. Del., W. Va., Ala., Miss.
Macrophoma diospyri Earle, fruit-spot. Ala.
Phoradendron flavescens (Pursh) Nutt., mistletoe. Tex.
Podosphaera ozyacanthae (DC.) D By., powdery mildew. Ind.
Ozonium omnivorum Shear (*Phymatotrichum omnivorum* (Shear) Dug.), root-rot. Tex.

ELAEAGNUS.

E. angustifolia, Russian-olive.

- Aecidium arctoum* Arth., rust. N. Dak.
Cercospora elaeagni Heald and Wolf, leaf-spot. Tex.
Septoria argyraea Sacc., leaf-spot. Iowa, N. Dak.

E. argentea, silverberry.

- Puccinia coronata* Cda., crown-rust. N. Dak., Mont.

ERIOBOTRYA.

E. japonica, loquat.

- Bacillus amylovorus* (Burr.) Trev. (*Erwinia amylovora* (Burr.) Com. S. A. B.), blight. Fla., La., Calif.
Fusicladium eriobotryae Cav., scab. Fla., Calif.

ERYTHRINA.

E. crista-galli, coraltree.

Cercospora erythrinae Ell. and Ev., leaf-spot. La.

ESCHSCHOLTZIA.

E. californica, California poppy.

Entyloma eschscholtziae Hark., smut. Calif.

Heterodera radiculicola (Greef) Muell., root-knot.

EUCALYPTUS.

Eucalyptus spp., eucalyptus.

Bacterium tumefaciens EFS. and Town. (*Phytomonas tumefaciens* (EFS. and Town.) Com. S. A. B.), crown-gall. Calif.

Botrytis sp., gray-mold. Calif.

Diaporthe eucalyptica Hark. Calif.

Fomes applanatus (Pers.) Wallr. (*Ganoderma applanatum* (Pers.) Pat.), white-streaked rot. Calif.

Hendersonia coryneoides Cke. and Hark., leaf-spot. Calif.

H. eucalypti Cke. and Hark., leaf-spot. Calif.

Macrophoma molleriana (Thuem.) Berl. Calif.

Pezizella lythri (Desm.) Shear and B. O. Dodge, leaf-spot. Calif.

Phyllosticta eucalypti Ell. and Ev., leaf-spot. Calif.

P. extensa Sacc. and Syd., leaf-spot. Calif.

Physalospora latitans Sacc. Calif.

P. suberumpens Ell. and Ev. Calif.

Polyporus schweinitzii Fr., red-brown butt-rot. Calif.

Septoria ceuthosporoides (Cke.) Sacc., leaf-spot. Calif.

S. mortolensis Penz. and Sacc., leaf-spot. Calif.

Damping-off (seedlings), undet. Calif.

Powdery mildew (seedlings), undet. Calif.

EUCHLAENA.

E. mexicana, teosinte.

Helminthosporium turcicum Pass., leaf-blight. Tex.

Physothermum zaeae-maydis Shaw, brown-spot. Fla., La.

Puccinia sorghi Schw., rust. Nebr.

Ustilago zaeae (Beckm.) Ung., smut. Conn., Ala., Ill., Iowa, Kans.

EUONYMUS.

Euonymus spp., burningbush, wahoo.

Bacterium tumefaciens EFS. and Town. (*Phytomonas tumefaciens* (EFS. and Town.) Com. S. A. B.), crown-gall. Conn.

Cercospora destructiva Rav., leaf-spot. S. C., Miss.

C. evonymi Ell., leaf-spot. Ky., Ill., Nebr., Kans.

Cladosporium fasciculatum Cda. S. C.

Colletotrichum griseum Heald and Wolf, anthracnose. La., Tex.

Exosporium concentricum Heald and Wolf, leaf-spot. Tex.

Gloeosporium frigidum Sacc., anthracnose. Miss.

Marssonina thomasiana Sacc., leaf-spot. Mich., Wis., Ill.

Microsphaera alni (Wallr.) Wint., powdery mildew. Ind., Ill., Iowa, Nebr., Miss.

M. euonymi (DC.) Sacc., powdery mildew. N. J., Miss., Ohio, Minn.

Oidium euonymi-japonici (G. Arcangeli) Sacc., powdery mildew. La.

Ozonium omnivorum Shear (*Phymatotrichum omnivorum* (Shear) Dug.), root-rot. Tex.

Phyllosticta evonymi Sacc., leaf-spot. Del.

P. pallens Ell. and Ev., leaf-spot. Ala., Tex., Ind.

Ramularia euonymi Ell. and Kell., leaf-spot. Mo., Kans.

Septoria euonymi Rabh., leaf-spot. Va.

EUPHORBIA.

E. marginata, snow-on-the-mountain.

Alternaria tenuis Nees, leaf-spot. Kans.

Microsphaera euphorbiae (Pk.) Berk. and Curt., powdery mildew. Ind., Mo., Kans.

Puccinia pammelii (Trel.) Arth., rust. Miss. Valley and Mo. Valley States.

Uromyces proeminens (DC.) Pass., rust. Great Plains, Upper Miss. Valley.

FAGOPYRUM.

F. esculentum, buckwheat.

Corticium vagum Berk. and Curt., stem-rot. N. C., Minn., Wash.

Phyllosticta polygonorum Sacc., leaf-spot. N. J.

Ramularia anomala Pk., leaf-spot. Ind.

R. rufo-maculans Pk., leaf-spot. Conn., Mich.

FAGUS.

F. americana, American beech.

Fomes applanatus (Pers.) Wallr. (*Ganoderma applanatum* (Pers.) Pat.), white-streaked rot. General throughout range of host.

F. fomentarius (L.) Fr., white sapwood rot. New England, N. Y., Pa.

F. ignarius (L.) Fr., white heart-rot. Mass.

Gloeosporium fagi (Desm.) Ell. and Ev., leaf-spot. Conn., N. Y., Pa.

Hydnum septentrionale Fr., white sapwood rot. Ind.

Microsphaera alni (Wallr.) Wint., powdery mildew. East of Miss. River.

Phyllactinia corylea (Pers.) Karst., powdery mildew. N. Y., Ohio, Ill.

Phyllosticta faginea Pk., leaf-spot. N. Y., Ohio, Ind., Wis.

FESTUCA.

Festuca spp., fescue.

Claviceps purpurea (Fr.) Tul., ergot. Me., N. Y., Pa., Va., Ill., Minn.

Colletotrichum graminicolum (Ces.) Wils., anthracnose. Pa., Minn.

Corticium vagum Berk. and Curt., stem-rot. General.

Helminthosporium dictyoides Drechs., net-blotch. New England, N. Y., Pa., Md., D. C., Va.

Ophiobolus graminis Sacc., take-all. N. Y., Ark.

Pleomeris piperi (Ricker) Syd., rust. Utah, Oreg., Calif.

Puccinia abundans (Pk.) Jack., rust. N. Dak., Colo., Utah, Calif.

P. coronata Cda., crown-rust. Conn., N. Y., Pa., Ky., Ind., Mo., Nebr., Kans., Colo., Oreg.

P. epiphylla (L.) Wettst., rust. Oreg.

P. graminis Pers., stem-rust. N. Y., Pa., Tenn., Ind., Mich., Minn., Iowa, Colo., Wyo., Wash., Oreg., Calif.

Septoria tenella Cke. and Ell., leaf-spot. N. J., Kans., Colo.

Tilletia fusca Ell. and Ev., covered smut. Western States.

Uromyces hordei Tr., rust. Miss., Tex.

Ustilago mulfordiana Ell. and Ev., smut. Western States.

U. striaeformis (West.) Niessl, stripe-smut. Md., N. Dak.

FIGUS.

F. aurea, Florida strangler fig.

Bacterium tumefaciens EFS. and Town. (*Phytomonas tumefaciens* (EFS. and Town.) Com. S. A. B.), crown-gall. Fla.

Cerotelium fici (Cast.) Arth., rust. Fla.

Colletotrichum elasticae F. Tassi, anthracnose. Fla.

Ophiodothella fici E. Bessey, leaf-spot. Fla.

F. carica, fig.

Aspergillus niger Tiegh., fruit-rot (smut). Calif.

Botrytis cinerea Auct., twig-blight, canker. Wash., Calif.

Cercospora fici Heald and Wolf, leaf-spot. General in South.

Cerotelium fici (Cast.) Arth., rust. General in South.

Colletotrichum elasticae F. Tassi, anthracnose. Miss.

Corticium laetum Karst., limb-blight. Ga., Ala., La., Miss.

Diplodia sycina syconophila Sacc., die-back. Tex.

Fusarium moniliforme Sheld., fruit-rot. Calif.

Glomerella cingulata (Ston.) Spauld. and Schrenk, anthracnose. Gulf States.

Heterodera radicleola (Greef) Muell., root-knot. Gulf States, N. Mex., Ariz.

Macrophoma fici Alm. and Cam., canker, fruit-rot. Tex.

Mycosphaerella bolleana Hig., leaf-spot. General in South.

Ozonium omnivorum Shear (*Phymatotrichum omnivorum* (Shear) Dug.), root-rot. Tex.

Rhizoctonia microsclerotia J. Matz, leaf-blight. Fla., Ala., La., Tex.

Rhizopus nigricans Ehr., rot. Ala., La.

Sclerotinia sclerotiorum (Lib.) Mass., die-back.

Tubercularia fici Edg., canker. Ala., La.

FICUS—Continued.

F. elastica, India rubber tree.

Glomerella cingulata (Ston.) Spauld. and Schrenk, anthracnose. Miss.

Phyllosticta roberti L. Boyer and Jacz., leaf-spot. Fla.

FILIPENDULA.

Filipendula sp., meadowsweet.

Cylindrosporium sp. Conn.

Septoria ulmariae Oud., leaf-spot. Conn.

Sphaerotheca humuli (DC.) Burr., powdery mildew. Vt.

Triphragmium ulmariae (Schum.) Lk., rust. Ind.

FORSYTHIA.

Forsythia sp., forsythia, *goldenbell.

Bacterium tumefaciens EFS. and Town. (*Phytomonas tumefaciens* (EFS. and Town.) Com. S. A. B.), crown-gall. Miss.

Heterodera radicolica (Greef) Muell., root-knot. Miss.

Phyllosticta discincola Ell. and Ev., leaf-spot. Md.

P. terminalis Ell. and Mart., leaf-spot. Fla.

FRAGARIA.

Fragaria sp., strawberry.

Armillaria mellea (Vahl) Quel., root-rot. Oreg.

Botrytis cinerea Auct., gray-mold rot. General.

Corticium vagum Berk. and Curt., crown-rot. Wash.

Dendrophoma obscurans (Ell. and Ev.) H. W. Anderson, angular spot. N. J., Md., Va., W. Va., S. C., Ill., Mich., Minn., Mo.

Diplocarpon earliana (Ell. and Ev.) Wolf (*Marssonina fragariae* Sacc.), leaf-scorch. East of Miss. River; Wis., Mont.

Heterodera radicolica (Greef) Muell., root-knot. Ark., Miss., Wash.

Mycosphaerella fragariae (Tul.) Lindau, leaf-spot. General.

Pezzizella lythri (Desm.) Shear and B. O. Dodge, tan brown-rot. Me., Md., Va., Fla., La., Ark., Ohio, Wis.

Phyllosticta fragaricola Desm. and Rob., leaf-spot. N. J., Fla.

Phytophthora cactorum (Leh. and Cohn) Schroet., leather rot. Ky., Tenn., Ark., Ill., Mo., Miss., La.

Pythium sp., lilac soft-rot. Tenn.

Rhabdospora fragaria Atk., leaf-spot. Ill.

Rhizoctonia sp., hard brown-rot (fruit). Tenn., N. C., Fla.

Rhizopus nigricans Ehr., leak. General east of Great Plains.

Sclerotinia sclerotiorum (Lib.) Mass., crown-rot. La., Miss., Tenn., Ark., Mo., Ohio.

Sclerotium rolfsii Sacc., stem-rot. Fla.

Sphaeronemella fragariae F. L. Stevens and A. Peterson, fruit-rot. Fla., La.

Sphaeropsis sp., black-rot. Ill.

Sphaerotheca humuli (DC.) Burr., powdery mildew. General.

Tylenchus dipsaci (Kuehn) Bast., stem nematode. Wash., Oreg.

Black-root, undet. Tenn., Fla., Ala., Mich., Wis., Colo.

FRAXINUS.

Fraxinus spp., ash.

Cercospora fraxinea Ell. and Ev., leaf-spot. Kans.

C. fraxiniles Ell. and Ev., leaf-spot. Fla., La., Tex.

C. superflua Ell. and Holw., leaf-spot. Iowa.

C. texensis Ell. and Gall., leaf-spot. Tex.

Cercospora trichophila Davis, leaf-spot. Wis.

Cladosporium epiphyllum (Pers.) C. Martius, leaf-spot. N. Y.

Cylindrosporium californicum Earle, leaf-spot. Oreg.

C. fraxini Ell. and Kell., leaf-spot. Md., Mich., Kans., Pacific coast.

C. minor Ell. and Kell., leaf-spot. Kans.

C. viridis Ell. and Kell., leaf-spot. La., Tex., Wash.

Fomes fraxinophilus Pk., white heartwood rot. Widespread.

Gloeosporium aridum Ell. and Holw., anthracnose. Conn., Mass., Pa., Ohio, Mich., Wis.

G. decipiens Ell. and Ev., spot. Iowa, Kans., Tex.

G. fraxini Hark., anthracnose. N. Y., Mich., Calif.

Leptosphaeria fraxini Ell. and Ev. Mo.

Marssonina fraxini Ell. and Davis, leaf-spot. Wis.

FRAXINUS—Continued.

Fraxinus spp., ash—Continued.

- Ozonium omnivorum* Shear (*Phymatotrichum omnivorum* (Shear) Dug.), root-rot. Tex.
Phoradendron flavescens (Pursh) Nutt., mistletoe. Tex., Ind., Ariz.
Phyllactinia corylea (Pers.) Karst., powdery mildew. Northeastern States.
Phyllosticta fraxinicola (F. Currey) Ell. and Ev., leaf-spot. East of Great Plains
P. viridis Ell. and Kell., leaf-spot. Widespread.
Piggotia fraxini Berk. and Curt., leaf-spot. General.
Puccinia fraxinata (Lk.) Arth., rust. General east of Great Plains.
Ramularia fraxinea Davis, leaf-spot. Wis.
Septoria besseyi Pk., leaf-spot. Wis., Iowa.
S. fraxini Desm., leaf-spot. Fla., La., Mich., Minn.
S. leucostroma Ell. and Ev., leaf-spot. Mass., Ind.
S. submaculata Wint., leaf-spot. Mo., Tex.

GAILLARDIA.

G. aristata, gaillardia.

Bullaria gaillardiae (Diet. and Holw.) Arth. and E. B. Mains (*Uredo gaillardiae* Diet. and Holw.), rust. Calif.

Erysiphe cichoracearum DC., powdery mildew. Mont.

G. pulchella, rose ring gaillardia.

Entyloma polysporum (Pk.) Farl., smut. Nebr., Kans.

Septoria gaillardiae Ell. and Ev., leaf-spot. Kans.

GARDENIA.

G. florida, Cape-jasmine.

Heterodera raditicola (Greef) Muell., root-knot. Tex., Calif. (greenhouse).

GARRYA.

G. elliptica, silktassel-bush.

Cercospora garryae Hark., leaf-spot. Calif.

C. glomerata Hark., leaf-spot. Calif.

Phyllosticta garryae Cke. and Hark., leaf-spot. Calif.

GAULTHERIA.

G. shallon, salal.

Phyllosticta gaultheriae Ell. and Ev., leaf-spot. Pacific coast.

GAYLUSSACIA.

Gaylussacia sp., huckleberry.

Exobasidium vaccinii (Fekl.) Wor., hypertrophy. Atlantic Coast States; Mich., Wis.

Guignardia vaccinii Shear, scald. Md.

Microsphaeraalni vaccinii (Schw.) Salm., powdery mildew. Mass., N. J., Md., Ill., Wis.

Pucciniastrum myrtilli (Schum.) Arth., rust. Mass., Conn., N. Y., Pa., Va.

Rhytisma vaccinii Fr., tar-spot. Mass.

Synchytrium vaccinii F. Thomas, red-gall. N. J.

GELSEMIUM.

G. sempervirens, Carolina-jessamine.

Phyllosticta gelsemii Ell. and Ev., leaf-spot. N. J.

GLADIOLUS.

Gladiolus sp., gladiolus.

Alternaria fasciculata (Cke. and Ell.) L. R. Jones and A. J. Grout. Pa.

Bacterium gummisudans McC., bacterial blight. Mich., Minn., N. Dak.

B. marginatum McC. (*Phytomonas marginata* (McC.) Com. S. A. B.), stem-rot, scab. Widely distributed.

Corticium vagum Berk. and Curt., root-rot. N. Dak.

Didymellina iridis (Desm.) Hoehn., leaf-spot. Md.

Fusarium sp., rot. Widely distributed.

Phyllosticta gladioli Ell. and Ev., leaf-spot. Ala.

Sclerotium sp., dry-rot. Widespread.

Septoria gladioli Pass., hard-rot, leaf-spot. General wherever host is grown.

GLEDITSIA.

G. triacanthos, honeylocust.

Cercospora condensata Ell. and Kell., leaf-spot. Ill., Kans.

C. olivacea (Berk. and Rav.) Ell., leaf-spot. Ala., Miss., Ill., Iowa.

Cladosporium gleditschiae Cke. S. C.

Fomes applanatus (Pers.) Wallr. (*Ganoderma applanatum* (Pers.) Pat.), white-streaked rot. N. Y.

Melasmia hypophylla (Berk. and Rav.) Sacc., leaf-spot. Widespread east of Great Plains.

Microsphaera alni (Wallr.) Wint., powdery mildew. General east of Great Plains.

Phoradendron flavescens (Pursh) Nutt., mistletoe. Ind., Tex.

Polyporus sulphureus (Bull.) Fr., brown-checked wood-rot.

Ravenelia opaca Diet., rust. Ill.

GORDONIA.

G. lasianthus, loblolly-bay.

Phyllosticta gordoniae Ell. and Mart., leaf-spot. Fla.

GOSSYPIUM.

G. hirsutum, Upland cotton, *G. barbadense*, Sea Island cotton.

Alternaria sp., leaf-spot. S. C.

Ascochyta gossypii Syd., blight. Va., N. C., S. C., Ark.

Bacterium malvacearum EFS. (*Phytomonas malvaceara* (EFS.) Com. S. A.

B.), angular leaf-spot. General in Cotton Belt States; Ariz.

Cercospora althaeina Sacc., leaf-spot. Ill.

Cerotium gossypii (Lagh.) Arth. (*Uredo gossypii* Lagh.), rust. Fla.

Corticium vagum Berk. and Curt., stem-rot, sore-shin. Cotton Belt States; Ariz.

Diplodia gossypina Cke., boll-rot. General in Cotton Belt States.

Fusarium spp., boll-rot. General in Cotton Belt States during wet seasons.

F. vasinfectum Atk., wilt. General in sandy soils of Cotton Belt States.

Glomerella gossypii (E. A. Southworth) Edg., anthracnose. Cotton Belt States.

Heterodera radicolica (Greef) Muell., root-knot. General in sandy soils in Cotton Belt States.

Macrosporium nigricantium Atk., black leaf-spot. Cotton Belt States; Ariz.

Mycosphaerella gossypina (Cke.) Earle, leaf-spot. General in Cotton Belt States.

Olpitrichum carpophilum Atk., boll-rot. N. C., S. C., Ala., La.

Ozonium omnivorum Shear (*Phymatotrichum omnivorum* (Shear) Dug.), root-rot. Tex., Okla., N. Mex., Ariz., Calif.

Phlyctaena gossypii Sacc., leaf-spot. S. C., Ala.

Phyllosticta gossypina Ell. and Mart., leaf-spot. N. C., S. C., Ala., Miss., Ill.

Puccinia hibiscata (Schw.) Kell. (*Aecidium gossypii* Ell. and Ev.), rust. Tex., Ariz., Calif.

Pythium debaryanum Hesse, damping-off. Ala.

Ramularia areola Atk., frosty mildew. Cotton Belt States; Fla.

Septoria gossypina Cke., leaf-spot. S. C., Miss.

Thielavia basicola (Berk. and Br.) Zopf, black root-rot. Ala.

Tylenchus penetrans Cobb, nematode. N. C., Ga.

Verticillium alboatrum Reinke and Berth., wilt. Va.

Malnutrition, "rust," nonpar. Poorer soils, Cotton Belt States.

GYMNOCLADUS.

G. dioicus, Kentucky coffeetree.

Cercospora gymnocladi Ell. and Kell., leaf-spot. Ill., Nebr., Kans., Mo.

Marssonina sp., leaf-spot. Nebr.

HAMAMELIS.

H. virginiana, witch-hazel.

Cercospora hamamelidis Ell. and Ev., leaf-spot. Fla.

Gonatobotryum maculicolum (Wint.) Sacc., leaf-spot. N. Y.

Phyllactinia corylea (Pers.) Karst., powdery mildew. Wis.

HAMAMELIS—Continued.

H. virginiana, witch-hazel—Continued.

- Phyllosticta hamamelidis* Cke., leaf-spot. General east of Miss. River.
Podosphaera biuncinata Cke. and Pk., powdery mildew. General east of Miss. River.
Ramularia hamamelidis Pk., leaf-spot. N. Y., W. Va., Mich., Ill., Wis.

HEDERA.

H. helix, English ivy.

- Glomerella cingulata* (Ston.) Spauld. and Schrenk, anthracnose. Conn., Md., N. C., Tex.
Phyllosticta concentrica Sacc., leaf-spot. N. Y., N. J., S. C., Ala., Tex.
P. hederacola Dur. and Mont., leaf-spot. N. Y., N. J.
Ramularia hedericola Heald and Wolf, leaf-spot. Tex.
Vermicularia trichella Fr., leaf-spot. Mass., S. C., Md., Ohio.

HELIANTHUS.

H. annuus, sunflower.

- Armillaria mellea* (Vahl) Quel., root-rot. Oreg.
Botrytis sp., stem-rot. Oreg., Calif.
Cercospora pachypus Ell. and Kell., leaf-spot. Kans., Tex.
Erytlyoma polysporum (Pk.) Farl., smut. Mont.
Erysiphe cichoracearum DC., powdery mildew. General.
Fusarium sp., damping-off. N. J.
Heterodera radicolola (Greef) Muell., root-knot. W. Va., Ala.
Ozonium omnivorum Shear (*Phymatotrichum omnivorum* (Shear) Dug.), root-rot. Tex.
Plasmopara halstedii (Farl.) Berl. and DeToni, downy mildew. Ohio, W. Va., Ind., Iowa, Minn., N. Dak., Kans.
Puccinia helianthi-mollis (Schw.) Jack., rust. General.
Sclerotinia sclerotiorum (Lib.) Mass., stem-rot. Mich., Wis., Minn., Iowa N. Dak., Mont., Idaho, Wash., Oreg.
Septoria helianthi Ell. and Kell., leaf-spot. Widespread.
H. tuberosus, Jerusalem-artichoke.
Cercospora helianthi Ell. and Ev., leaf-spot. Kans.
Coleosporium helianthi (Schw.) Arth., rust. Va., S. C., Ala., Ill.
Erysiphe cichoracearum DC., powdery mildew. Northeastern and North-Central States.
Ozonium omnivorum Shear (*Phymatotrichum omnivorum* (Shear) Dug.), root-rot. Tex.
Plasmopara halstedii (Farl.) Berl. and DeToni, downy mildew. Vt., Del., Wis., Iowa, Kans.
Puccinia helianthi-mollis (Schw.) Jack., rust. East of Great Plains.
Sclerotinia sp., wilt. Wash.
Sclerotium rolfsii Sacc., stem-rot. S. C., La.

HELLEBORUS.

H. niger, Christmas-rose.

- Coniothyrium hellebori* Cke. and Mass. N. Y., Oreg.

HEMEROCALLIS.

H. fulva, daylily.

- Cercospora hemerocallis* L. R. Tehon, leaf-spot. Ill.
Didymellina iridis (Desm.) Hoehn., leaf-spot. N. J.

HIBISCUS.

H. esculentus, okra, gumbo.

- Ascochyta abelmoschi* Harter, pod-spot. N. Y., Md., S. C.
Botrytis sp., rot. N. Y.
Cercospora althaeina Sacc., leaf-spot. La.
C. brachypoda Speg., leaf-spot. La.
C. hibisci Tr. and Earle, leaf-spot. Fla., Ala., La., Miss.
Corticium vagum Berk. and Curt., stem-rot. Ala., Tex.
Erysiphe cichoracearum DC., powdery mildew. Conn.
Fusarium vasinfectum Atk., wilt. Southern States; Conn., Pa., Ariz.
Heterodera radicolola (Greef) Muell., root-knot. Southern States.
Ozonium omnivorum Shear (*Phymatotrichum omnivorum* (Shear) Dug.), root-rot. Tex., Ariz.

HIBISCUS—Continued.

H. esculentus, okra, gumbo—Continued.

Phyllosticta hibiscina Ell. and Ev., leaf-spot. Ill.

Verticillium alboatrum Reinke and Berth., wilt. N. J., S. C., Ala., Oreg., Calif.

H. syriacus, *rose-of-Sharon.

Heterodera radiculicola (Greef) Muell., root-knot. Tex.

Kuehneola malvicola (Speg.) Arth., rust. La., Miss.

Nectria sp., canker. Ohio.

Ozonium omnivorum Shear (*Phymatotrichum omnivorum* (Shear) Dug.), root-rot. Tex.

Phyllosticta syriaca Sacc., leaf-spot. N. Y.

HICORIA.

Hicoria spp., hickory.

Armillaria mellea (Vahl) Quel., root-rot. Ind.

Bacterium tumefaciens EFS. and Town. (*Phytophthora tumefaciens* (EFS. and Town.) Com. S. A. B.), crown-gall. Md., Kans.

Fomes applanatus (Pers.) Wallr. (*Ganoderma applanatum* (Pers.) Pat.), white-streaked rot. Conn.

Fusicladium effusum Wint., scab. Ill., Kans.

Gnomonia caryae Wolf, anthracnose. East of Miss. River; Mo.

Hendersonia davisii Ell. and Ev., leaf-spot. Wis.

Marssonina juglandis (Lib.) Sacc., leaf-spot. N. J., W. Va., Iowa.

Microspora alni (Wallr.) Wint., powdery mildew. Ala., Miss., Ind., Ill., Mo.

Microstroma juglandis (Bereng.) Sacc., witches'-broom. General east of Great Plains.

Mycosphaerella convexula (Schw.) F. V. Rand, leaf-spot. S. C., Ga., Fla., Ala., Ohio.

Phoradendron flavescens (Pursh) Nutt., mistletoe. Tex., Ind.

Phyllactinia corylea (Pers.) Karst., powdery mildew. Wis.

Phyllosticta caryae Pk., leaf-spot. Northeastern and North-Central States; Gulf States.

P. convexula Bub., leaf-spot. Mo.

P. subtilis Pk., leaf-spot. N. Y.

Rosellinia caryae L. Bonar, canker. Mich.

Septoria caryae Ell. and Ev., leaf-spot. Del.

S. hicoloriae Tharp, leaf-spot. Tex.

Strumella coryneoidea Sacc. and Wint., canker. Pa.

H. pecan, pecan.

Bacterium tumefaciens EFS. and Town. (*Phytophthora tumefaciens* (EFS. and Town.) Com. S. A. B.), crown-gall. S. C., Gulf States, Calif.

Botryosphaeria berengeriana DeNot., die-back. S. C., Ala., Fla.

Cercospora fusca (Heald and Wolf) emend. F. V. Rand, brown leaf-spot. S. C., Gulf States, N. Mex.

Fusicladium effusum Wint., scab. N. C. to Okla. and Tex.

Glomerella cingulata (Ston.) Spauld. and Schrenk, anthracnose. S. C., Gulf States.

Heterodera radiculicola (Greef) Muell., root-knot.

Microspora alni (Wallr.) Wint., powdery mildew. S. C., Gulf States.

Microstroma juglandis (Bereng.) Sacc., leaf-spot. Ga., Ala., Tex.

M. juglandis robustum Hig., flower-blight. Ga.

Mycosphaerella convexula (Schw.) F. V. Rand, leaf-blotch. S. C., Ga., Ala., Fla., Ohio.

Oidium sp., powdery mildew. Tex.

Ozonium omnivorum Shear (*Phymatotrichum omnivorum* (Shear) Dug.), root-rot. Tex.

Pestalozzia sp., leaf-spot. Fla.

Phoma sp., twig-blight. Fla.

Phoradendron flavescens (Pursh) Nutt., mistletoe. Tex.

Phyllosticta caryae Pk., leaf-spot. Va., S. C., Gulf States.

Septoria caryae Ell. and Ev., leaf-spot. Tex.

Kernel-spot, southern stinkbug (*Nezara viridula* L.). N. C., S. C., Ga., Fla., Ala., Miss., La., Tex.

Rosette, undet. Del., Va., N. C., S. C., Gulf States; Ark., Calif.

HOLCUS.

H. halepensis, Johnson grass.

- Cercospora sorghi* Ell. and Ev., leaf-spot. Ala., La., Tex., Nebr.
Colletotrichum lineola Cda., anthracnose. Ala., La., Tex.
Helminthosporium turcicum Pass., leaf-blight. Ala., Tex.
Phyllosticta sorghina Sacc., leaf-spot. Tex.
Puccinia purpurea Cke., rust. S. C., Fla., Ala., La., Okla., Tex., Calif.
Septoria pertusa Heald and Wolf, leaf-spot. Tex.
Sphacelotheca sorghi (Lk.) Clint., smut. Utah, Wash.

H. sorghum, sorghum.

- Bacterium andropogoni* EFS., stripe. General.
Cercospora sorghi Ell. and Ev., leaf-spot. Ga., Ala., La., Miss.
Colletotrichum lineola Cda., anthracnose. Conn., W. Va., N. C., Ga., Fla., Ala., La., Tex., Minn.
Helminthosporium turcicum Pass., leaf-blight. Kans., Tex.
Puccinia purpurea Cke., rust. Tex., Okla., La., Fla., Calif.
Sclerotium rolfsii Sacc., stem-rot. La.
Sorosporium reilianum (Kuehn) McAlp., head-smut. General.
Sphacelotheca cruenta (Kuehn) Potter, loose kernel smut. Ala., Tex., Ark., N. Mex.
S. sorghi (Lk.) Clint., covered kernel smut. General.

**H. sorghum saccharatus*, sorgo, sugar sorghum.

- Bacterium andropogoni* EFS., stripe.
Colletotrichum lineola Cda., anthracnose. N. J., Va.
Phoma insidiosa F. Tassi, leaf-spot. Tex., Miss., Ark., Kans.
Puccinia purpurea Cke., rust. Tex.
Sphacelotheca sorghi (Lk.) Clint., covered kernel smut. Colo.

H. sorghum sudanensis, Sudan grass.

- Colletotrichum graminicolum* (Ces.) Wils., anthracnose. N. C., Ala., Tex., N. Dak.
C. lineola Cda., anthracnose. Ala.
Helminthosporium turcicum Pass., leaf-blight. Tex.
Phoma insidiosa F. Tassi, leaf-spot. Va.
Sorosporium reilianum (Kuehn) McAlp., head-smut. Wash.
Sphacelotheca sorghi (Lk.) Clint., covered kernel smut. N. C., Nebr., Kans.

**H. sorghum technicus*, broomcorn.

- Bacterium andropogoni* EFS., stripe.
Colletotrichum lineola Cda., anthracnose. Occurs in widely scattered States.
Sorosporium reilianum (Kuehn) McAlp., head-smut. Ohio.
Sphacelotheca cruenta (Kuehn) Potter, loose kernel smut. Tex.
S. sorghi (Lk.) Clint., covered kernel smut. Ohio.

HOLODISCUS.

H. discolor, *oceanspray.

- Cylindrosporium filipendulae* Thuem., leaf-spot. Wash.
Phyllactinia corylea (Pers.) Karst., powdery mildew. Wash.
Podosphaera ozyacanthae (DC.) D By., powdery mildew. Idaho.

HORDEUM.

H. vulgare, barley.

- Bacterium translucens* L. R. Jones, A. G. Johnson, and C. S. Reddy, bacterial blight. S. C., Tex., Ark., Ind., Wis., Minn., Iowa, N. Dak., S. Dak., Mont., Colo., Idaho, Oreg.
Claviceps purpurea (Fr.) Tul., ergot. Infrequent but widely distributed.
Colletotrichum graminicolum (Ces.) Wils., anthracnose. General east of Great Plains.
Erysiphe graminis DC., powdery mildew. General.
Fusarium culmorum letaius Sherb., seedling blight. Oreg., Calif.
Gibberella saubinetii (Mont.) Sacc., scab. General east of Great Plains.
Helminthosporium californicum W. W. Mackie and G. E. Paxton, rusty blotch. Calif.
H. gramineum Rabh., stripe. General.
H. sativum Pam., King, and Bak., spot-blotch. General.
Marasmius tritici P. A. Young. Ill.
Ophiobolus graminis Sacc., take-all, foot-rot. Calif.

HORDEUM—Continued.*H. vulgare*, barley—Continued.

- Puccinia anomala* Rostr., leaf-rust. General.
P. glumarum (Schm.) Eriks. and Henn., stripe-rust. West of Great Plains.
P. graminis Pers., stem-rust. General.
Pyrenophora teres (Died.) Drechs., net-blotch. General.
Rhizoctonia sp., foot-rot. Wash.
Rhynchosporium secalis (Oud.) Davis, scald. Upper Miss. Valley; Pacific Northwest; Calif.
Septoria passerinii Sacc., leaf-spot. Mich., Minn., Iowa, N. Dak., S. Dak., Idaho, Oreg.
Ustilago hordei (Pers.) Kell. and Sw., covered smut. General.
U. nuda (Jens.) Kell. and Sw., loose smut. General.

HUMULUS.*H. lupulus*, hop.

- Armillaria mellea* (Vahl) Quel., root-rot. Oreg.
Colletotrichum sp., anthracnose. N. Y.
Cylindrosporium humuli Ell. and Ev., leaf-spot. N. Y., N. J., Del., Mich., Wis., Iowa.
Erysiphe cichoracearum DC., powdery mildew. Utah.
Phyllosticta decidua Ell. and Kell., leaf-spot. Wis.
P. humuli Sacc. and Speg., leaf-spot. Mass., Iowa.
Plasmopara humuli Miyabe and Tak., downy mildew. Wis.
Septoria lupulina Ell. and Kell., leaf-spot. Kans.
Sphaerotheca humuli (DC.) Burr., powdery mildew. Me., N. Y., Ala., Wyo., Pacific coast.

HYACINTHUS.*H. orientalis*, common hyacinth.

- Bacterium hyacinthi* J. H. Wakker (*Phytomonas hyacinthi* (Wakker) Com. S. A. B.), yellow disease. Mass.
Fusarium sp., bulb-rot (dry). Mo., Wash.
F. bulbigenum Cke. and Mass., bulb-rot. R. I.
Tylenchus dipsaci (Kuehn) Bast., stem and bulb nematode. Wash.
Mosaic, gray disease, undet. Wash.

HYDRANGEA.*Hydrangea* sp., hydrangea.

- Ascochyta* sp., leaf-spot. Pa.
Botrytis cinerea Auct., blight. Wash.
Cercospora hydrangeana Tharp, leaf-spot. Ala., Tex.
Heterodera radiculicola (Greef) Muell., root-knot. Miss.
Phyllosticta hydrangeae Ell. and Ev., leaf-spot. N. J., Ala., Ind.
Pucciniastrum hydrangeae (Berk. and Curt.) Arth., rust. Frequent east of Miss. River.
Septoria hydrangeae Bizz., leaf-spot. Miss.

HYDRASTIS.*H. canadensis*, goldenseal.

- Botrytis* sp., stem-rot. Conn., N. Y., Ind., Mich., Wis., Wash.
Fusarium sp., wilt. N. Y., Ohio, Ill.
Heterodera radiculicola (Greef) Muell., root-knot. Ohio.

ILEX.*Ilex* spp., holly, winterberry.

- Cercospora ilicis* Ell., leaf-spot. N. J., Ala., Miss.
Microsphaera alni (Wallr.) Wint., powdery mildew. Ala., Ill., Wis.
Phyllosticta concomitans Ell. and Ev., leaf-spot. La.
P. haynaldi Roum. and Sacc., leaf-spot. W. Va.
P. ilicicola (Cke. and Ell.) Ell. and Ev., leaf-spot. N. Y.
P. opaca Ell. and Ev., leaf-spot. W. Va.
P. terminalis Ell. and Mart., leaf-spot. Fla.
Ramularia alaterni Thuem., leaf-spot. Mich.
R. prinus Pk., leaf-spot. N. Y., Wis.
Rhytisma concavum Ell. and Kell., tar-spot. Ohio.
R. ilicicolum Schw., tar-spot. Va., Miss.

ILEX—Continued.

Ilex spp., holly, winterberry—Continued.

R. ilicis-canadensis Schw., tar-spot. Me., Mich., Ind.

R. velatum (Schw.) Fr., tar-spot. Miss.

Septoria ilicifolia Cke. and Ell., leaf-spot. N. J.

I. opaca, American holly.

Cercospora ilicicola Maub., leaf-spot. Tex.

C. pulvinula Cke. and Ell., leaf-spot. N. J., Tex.

Diplodia sp., foot-rot. Fla.

Melampsoropsis ilicinum (Ell. and Ev.) Jack., rust.

Phyllactinia corylea (Pers.) Karst., powdery mildew. Ill.

Phyllosticta ilicicola (Cke. and Ell.) Ell. and Ev., leaf-spot. N. Y., N. J.

P. opaca Ell. and Ev., leaf-spot. W. Va., S. C.

P. terminalis Ell. and Mart., leaf-spot. Miss.

Rhizisma curtisii Berk. and Rav., tar-spot. Md., S. C., Ala., Tex.

R. ilicis-canadensis Schw., tar-spot. W. Va.

IPOMOEA.

I. batatas, sweetpotato.

Albugo ipomoeae-panduranae (Schw.) Sw., white-rust. General where sweetpotatoes are grown.

Botrytis cinerea Auct., gray-mold rot. N. J.

Coleosporium ipomoeae (Schw.) Burr., rust. Miss.

Corticium vagum Berk. and Curt., stem-rot. Frequent in sweetpotato States.

Cystospora batata (Ell. and Hals.) J. A. Elliott, soil rot, pox. Middle Atlantic and Gulf States, Ohio, Kans., Ark., Okla.

Diaporthe batatatis (Ell. and Hals.) Harter and E. Field, dry-rot. N. J. to Kans. and Tex.

Diplodia tubericola (Ell. and Ev.) Taub., Java black-rot. General, Del. to Kans., Ga., Tex.

Fusarium batatatis Woll. and *F. hyperoxysporum* Woll., stem-rot. General in sweetpotato States.

F. oxysporum Schl., surface rot. N. J., Ala., Miss.

Heterodera radicolica (Greef) Muell., root-knot. Southern States, Calif.

Monilochaetes infuscans Ell. and Hals., scurf. General.

Ozonium omnivorum Shear (*Phymatotrichum omnivorum* (Shear) Dug.), root-rot. Tex.

Phyllosticta batatas (Thuem.) Cke., leaf-spot. N. J. and Ohio to Kans. and Tex.

Plenodomus destruens Harter, foot-rot. N. J. to Iowa and southward, Calif.

Pythium sp., rootlet rot. N. Y., Del., Md., Va. and in States south and west.

Rhizopus nigricans Ehr., soft-rot, ring-rot. General as a storage rot.

Sclerotinia sp., damping-off. N. J.

Sclerotium bataticola Taub., charcoal rot. Frequent throughout country as a storage rot.

S. rolfsii Sacc., stem-rot. S. C. to Tex.

Septoria bataticola Taub., leaf-spot. Iowa to Tex. and eastward.

Sphaeronema fimbriatum (Ell. and Hals.) Sacc., black-rot. General in all sweetpotato States.

Trichoderma koningi Oud., storage rot. N. J., Del.

Mosaic, undet. Fla., Miss., Ark., Tex., Kans.

Mottle-necrosis (associated with *Pythium* sp.). N. J., D. C.

I. purpurea, morning-glory.

Albugo ipomoeae-panduranae (Schw.) Sw., white-rust. Del., Va., W. Va., Ga., Ala., Miss., Kans.

Cercospora alabamensis Atk., leaf-spot. Ala.

C. ipomoeae Wint., leaf-spot. Ala.

C. viridula Ell. and Ev., leaf-spot. N. J., N. C., Nebr.

Coleosporium ipomoeae (Schw.) Burr., rust. Miss. Valley States, Ala., Tex.

Heterodera radiciola (Greef) Muell., root-knot.

Puccinia crassipes Berk. and Curt., rust. Okla.

IRIS.

Iris sp., iris.

- Bacillus carotovorus* L. R. Jones (*Erwinia carotovora* (Jones) Com. S. A. B.), soft-rot. Conn., N. Y., N. J., Ohio, Ind., Mich., Minn.
Cylindrosporium iridis Ell. and Hals., leaf-spot. Ind., Iowa.
Didymellina iridis (Desm.) Hoehn., leaf-spot. Widespread in northern two-thirds of United States.
Macrosporium iridicolum Ell. and Ev., leaf-spot. Idaho.
M. iridis Cke. and Ell., leaf-spot. Ala., Ohio, Mont.
Pseudomonas iridis Van Hall, rhizome rot. S. Dak.
Puccinia iridis (DC.) Rabh., rust. Conn., N. Y., Mich., Colo., Pacific coast.
Sclerotinia sclerotiorum (Lib.) Mass., stem-rot. Wash.
Sclerotium rolfsii Sacc., crown-rot. Md., Ind., Miss., Calif.
Scolecotrichum iridis Fautr. and Roum., leaf-spot. Miss., Minn.
S. punctulatum Tr. and Earle, leaf-spot. Miss.
Septoria sp., leaf-spot. N. Dak.

I. versicolor, blueflag iris.

- Cylindrosporium iridis* Ell. and Hals., leaf-spot. Ind.
Didymellina iridis (Desm.) Hoehn., leaf-spot. Ind.
Phyllosticta iridis Ell. and Mart., leaf-spot. N. Y., Fla., Ohio, Mich.
Puccinia iridis (DC.) Rabh., rust. Northeastern States.
P. majanthae (Schum.) Arth. and Holw., rust. Mass., N. Y., Ind., Mich., Wis., Minn., Iowa, Nebr.

JUGLANS.

J. cinerea, butternut.

- Cercospora juglandis* Kell. and Sw., leaf-spot. Mass.
Fomes igniarius (L.) Fr., white heart-rot. Vt., N. J.
Gnomonia leptostyla (Fr.) Ces. and DeNot., anthracnose. General throughout range of host.
Melanconis juglandis (Ell. and Ev.) A. H. Graves, canker. East of Miss. River; Wis., Iowa.
Microsphaera alni (Wallr.) Wint., powdery mildew. Ill.
Microstroma juglandis (Bereng.) Sacc., leaf-spot. General over range of host.
Phyllactinia corylea (Pers.) Karst., powdery mildew. Ind.
Polyporus sulphureus (Bull.) Fr., brown-checked wood-rot.

J. hindsii, Hinds walnut.

- Cylindrosporium juglandis* Wolf, leaf-spot. Calif.
Microstroma juglandis (Bereng.) Sacc., leaf-spot. Calif.

J. nigra, black walnut.

- Armillaria mellea* (Vahl) Quel., root-rot. Oreg.
Bacterium tumefaciens EFS. and Town. (*Phytomonas tumefaciens* (EFS. and Town.) Com. S. A. B.), crown-gall. Kans., Calif.
Cercospora juglandis Kell. and Sw., leaf-spot. Kans.
Fomes everhartii (Ell. and Gall.) Schrenk, heart-rot.
F. igniarius (L.) Fr., white heart-rot. Ohio.
Gnomonia leptostyla (Fr.) Ces. and DeNot., anthracnose. General throughout range of host.
Melanconis juglandis (Ell. and Ev.) A. H. Graves, canker. N. Y.
Microsphaera alni (Wallr.) Wint., powdery mildew. Ind., Ill., Kans., Miss.
Microstroma juglandis (Bereng.) Sacc., leaf-spot. Del., Md., N. C., Ohio, Ill., Mo., Kans.
Ozonium omnivorum Shear (*Phymatotrichum omnivorum* (Shear) Dug.), root-rot. Tex.
Phoradendron flavescens (Pursh) Nutt., mistletoe. Ind.
Pheospora multimaculans Heald and Wolf, leaf-spot. Tex.
Polyporus sulphureus (Bull.) Fr., brown-checked wood-rot.
Septoria juglandis Berk. and Curt., leaf-spot. Pa., N. C.

J. regia, Persian walnut (English walnut).

- Armillaria mellea* (Vahl) Quel., root-rot. Oreg., Calif.
Bacterium juglandis (N. B. Pierce) EFS., bacterial blight. N. Y., Del., Va., Pacific coast.
B. tumefaciens EFS. and Town. (*Phytomonas tumefaciens* (EFS. and Town.) Com. S. A. B.), crown-gall. Pacific coast.

JUGLANS—Continued.

J. regia, Persian walnut (English walnut)—Continued.

- Cylindrosporium* sp., leaf-spot. Ala.
C. juglandis Wolf, leaf-spot. N. C.
Dothiorella gregaria Sacc., melaxuma. Calif.
Glomerella cingulata (Ston.) Spauld. and Schrenk, anthracnose. Md.
Melanconis juglandis (Ell. and Ev.) A. H. Graves, canker. Conn., N. J.
Microstroma juglandis (Bereng.) Sacc., leaf-spot. Conn., Calif.
Sphaeropsis sp., canker. Conn.

J. sieboldiana, Japanese walnut.

- Bacterium tumefaciens* EFS. and Town. (*Phytoplasma tumefaciens* (EFS. and Town.) Com. S. A. B.), crown-gall. Pa.
Melanconis juglandis (Ell. and Ev.) A. H. Graves, canker. Conn., N. Y., N. J.
Ozonium omnivorum Shear (*Phymatotrichum omnivorum* (Shear) Dug.), root-rot. Tex.

JUNIPERUS.

Juniperus spp., juniper, redcedar.

- Cercospora sequoiae juniperi* Ell. and Ev., leaf-spot. Wis.
Cyanospora albicedrae Heald and Wolf, whitening. Tex. (*J. montana*).
Fomes earlei (Murr.) Sacc. and D. Sacc., yellow pocket rot. Tex., Colo., N. Mex., Ariz.
F. juniperinus Schrenk, white pocket rot. Central States.
F. roseus (Alb. and Schw.) Fr., brown pocket rot. Fla., Ala.
F. texanus (Murr.) Hedge. and Long, brown fibrous rot. Tex., N. Mex., Ariz.
Gymnosporangium bermudianum (Farl.) Earle, rust. Ala., Miss.
G. betheli Kern, rust. N. Dak., Mont., Colo., N. Mex.
G. clavariaeforme (Jacq.) DC., rust. East of Great Plains.
G. corniculans Kern, rust. Mich., Wis.
G. cornutum (Pers.) Arth., rust. Mich., Colo.
G. davisii Kern, rust. Me., Wis.
G. exiguum Kern, cedar rust. Tex.
G. germinale (Schw.) Kern., rust. Eastern States.
G. globosum Farl., rust. Eastern States.
G. gracilens (Pk.) Kern and Bethel, rust. Colo., Utah, N. Mex., Ariz., Nev.
G. harknessianum (Ell. and Ev.) Kern, rust. Oreg.
G. inconspicuum Kern, rust. Colo., Utah.
G. japonicum Syd., rust. Conn., Mass., Oreg.
G. juniperinum (L.) C. Martius, rust. Iowa, Colo., Utah, Wash.
G. juniperi-virginianae Schw., rust. East of Great Plains.
G. juvenescens Kern, rust. Mont., Colo., Utah, N. Mex., Idaho.
G. kernianum Bethel, rust. Colo., N. Mex., Utah, Idaho.
G. multiporum Kern, rust. Colo.
G. nelsoni Arth., rust. Northern Rocky Mt. States.
G. nidus-avis Thax., rust. Mass., N. Y., Nebr.
G. trachysorum Kern, rust. Fla.
G. tubulatum Kern, rust. Mont.
Herpotrichia nigra Hartig, matting. Colo. (*J. sibirica* and *J. communis*).
Lophodermium juniperinum (Fr.) DeNot., leaf-cast. Iowa, Colo.
Phomopsis juniperovora G. Hahn, nursery blight. Pa., Ohio, Ill., Mo., Iowa, Nebr., Kans.
Phoradendron juniperinum Engelm., mistletoe. Southwestern and Western States.
- J. virginiana*, redcedar.
- Cercospora sequoiae juniperi* Ell. and Ev., leaf-spot. Wis.
Fomes annosus Fr., white spongy rot. Del.
F. juniperinus Schrenk, white pocket rot. Md.
F. roseus (Alb. and Schw.) Fr., brown pocket rot. General.
Gymnosporangium bermudianum (Farl.) Earle, rust. Fla., La., Miss.
G. corniculans Kern, rust. N. Y.
G. effusum Kern, rust. N. Y., N. J., S. C., Va.
G. exiguum Kern, rust. Tex.
G. exterum Arth. and Kern, rust. Ky.
G. floriforme Thax., rust. Gulf States.

JUNIPERUS—Continued.*J. virginiana*, redcedar—Continued.

- G. germinale* (Schw.) Kern, rust. General east of Great Plains.
G. globosum Farl., rust. General east of Great Plains.
G. juniperi-virginianae Schw., rust. General east of Great Plains.
G. juvenescens Kern, rust. Wis., Nebr.
G. nidus-avis Thax., rust. General east of Miss. River.
G. trachysorum Kern, rust. S. C., Fla., Miss.
Phomopsis juniperovora G. Hahn, nursery blight. N. Y. to Kans.
Poria purpurea Fr., brown laminated rot. Iowa.

KALMIA.*K. latifolia*, mountain-laurel.

- Cercospora kalmiae* Ell. and Ev., leaf-spot. Conn., Pa., W. Va.
C. sparsa Cke., leaf-spot. S. C., Miss.
Mycosphaerella colorata (Pk.) Earle, leaf-spot. N. Y., Pa., Ala.
Pestalotzia kalmicola Ell. and Ev., leaf-spot. N. J., Del.
Phomopsis kalmiae Enlows, leaf-blight. D. C.
Phyllosticta kalmicola (Schw.) Ell. and Ev., leaf-spot. N. Y., N. J., Pa., Del., Md., Miss.
P. latifolia Ell. and Ev., leaf-spot. N. J., Del., Miss.
Septoria angustifolia Ell. and Ev., leaf-spot. Atlantic Coast States; Ohio.
Venturia kalmiae Pk., leaf-spot. N. Y.

KERRIA.*K. japonica*, kerria.

- Coccomyces kerriae* V. B. Stewart, twig and leaf blight. Conn., Del., Ala., Ky.
Cylindrosporium sp., leaf-spot. Md.
Septoria sp., leaf-spot. N. J., Md.

LACTUCA.*L. sativa*, lettuce.

- Alternaria* sp., leaf-spot. Ohio, Fla., La., Wash.
Aplanobacter rhizoctonia R. C. Thomas, bacterial rosette. Ohio.
Bacillus carotovorus L. R. Jones (*Erwinia carotovora* (Jones) Com. S. A. B.), soft-rot. General.
Bacterium marginale N. A. Brown (*Phytomonas marginale* (Brown) Com. S. A. B.), leaf-spot. N. J., Kans.
B. viridilividum N. A. Brown (*Phytomonas viridilivida* (Brown) Com. S. A. B.), lettuce rot. Va., La., Mich.
B. vitians N. A. Brown (*Phytomonas vitians* (Brown) Com. S. A. B.), bacterial wilt. N. J., Va., S. C., N. Mex.
Botrytis cinerea Auct., gray-mold rot. General.
Bremia lactucae E. Regel, downy mildew. General.
Corticium vagum Berk. and Curt., bottom rot. General.
Heterodera radiculicola (Greef) Muell., root-knot. Southern States.
Macrosporium cladosporioides Desm., leaf-spot. Fla.
Marssonina panattoniana (Berl.) Magn., anthracnose. N. Y., N. C., Ohio, Mich., Kans., Utah, Oreg., Wash.
Ozonium omnivorum Shear (*Phymatotrichum omnivorum* (Shear) Dug.), root-rot. Tex., Ariz.
Puccinia hieraciata (Schw.) Jack., rust. Minn., Ind.
Pythium debaryanum Hesse, damping-off. Conn., N. Y., Pa., Fla., Ohio, Mich.
Sclerotinia minor I. C. Jagger, drop, pink-rot. Mass., N. Y., Pa., Fla.
S. sclerotiorum (Lib.) Mass., drop. General.
Sclerotium rolfsii Sacc., stem-rot. Fla.
Septoria lactucae Pass., leaf-spot. East of Great Plains.
Mosaic, undet. Conn., N. Y., Pa., S. C., Fla., Minn.
Rio Grande disease (rabbit-ear, white-heart), undet. N. Y., Miss., La., Tex., Ill.
Tipburn, nonpar. Widespread.

LAGERSTROEMIA.*L. indica*, crapemyrtle.

- Cercospora lythracearum* Heald and Wolf, leaf-spot. Tex.
Phyllosticta lagerstroemiae Ell. and Ev., leaf-spot. La., Tex.
Powdery mildew, undet. S. C., Ga., Ala., La.

LARIX.

L. europaea, European larch.

Melampsora bigelowii Thuem., rust. N. Y., Ind.

M. medusae Thuem., rust. Ind.

L. laricina, American larch, or tamarack.

Fomes officinalis Fr., reddish brown-rot. Wis.

F. pinicola Fr., brown crumbly rot. General with host.

Melampsora bigelowii Thuem., rust. N. Y., Wis.

M. medusae Thuem., rust. N. Y., Mich., Ind.

Melampsorium betulae (Schum.) Arth., rust. Wis.

Polyporus schweinitzii Fr., red-brown butt-rot.

Razoumofskyia laricis Piper, mistletoe witches'-broom. Idaho.

R. pusilla (Pk.) O. Kuntze, mistletoe. Northern States.

Trametes pini (Brot.) Fr. (*Fomes pini* (Thore) Karst.), honeycomb rot. Minn.

L. occidentalis, western larch.

Botrytis sp., seedling twig-blight. Idaho.

Fomes officinalis Fr., reddish brown-rot. Mont., Idaho.

F. pinicola Fr., brown crumbly rot. Idaho.

F. roseus (Alb. and Schw.) Fr., brown pocket rot. General with host.

Hypodermella laricis Tub., leaf-cast. Mont., Idaho, Oreg.

Lophodermium laricinum Duby, leaf-cast. Idaho, Wash.

Melampsora bigelowii Thuem., rust. Idaho.

Polyporus berkeleyi Fr., string and ray rot. Idaho.

P. schweinitzii Fr., red-brown butt-rot. Idaho.

P. sulphureus (Bull.) Fr., brown-checked wood-rot. Idaho.

Razoumofskyia laricis Piper, mistletoe witches'-broom. Mont., Pacific Northwest.

Rhizina inflata (Schaeff.) Sacc., seedling blight. Idaho.

Sparassis radicata Weir, yellow root-rot. Mont., Pacific Northwest.

Trametes pini (Brot.) Fr. (*Fomes pini* (Thore) Karst.), honeycomb rot. Idaho.

LATHYRUS.

L. odoratus, sweet pea.

Bacillus lathyri Manns and Taub., streak. Mass., N. Y., Pa., Del.

Colletotrichum pisi Pat., anthracnose. S. C., Ga.

Corticium vagum Berk. and Curt., stem-rot. Widespread.

Erysiphe polygoni DC., powdery mildew. General.

Fusarium lathyri Taub., wilt, stem-rot. Conn., Mass., N. Y., Va., Fla., Ind., N. Dak.

F. martii pisi F. R. Jones, root-rot. N. Y.

Glomerella cingulata (Ston.) Spauld. and Schrenk, anthracnose. Occurs scatteringly east of Great Plains.

Heterodera radiculicola (Greef) Muell., root-knot.

Microsphaera alni (Wallr.) Wint., powdery mildew. General.

Ozonium omnivorum Shear (*Phymatotrichum omnivorum* (Shear) Dug.), root-rot. Va.

Phytophthora cactorum (Leb. and Cohn) Schroet., root-rot. Conn.

Pythium debaryanum Hesse, root-rot. Conn.

Sclerotinia sclerotiorum (Lib.) Mass., stem-rot, collar rot. Pa.

Sclerotium rolfsii Sacc., stem-rot. Fla.

Thielavia basicola (Berk. and Br.) Zopf, black root-rot. Conn., N. Y., Pa., Del., Ohio, Calif.

Mosaic, undet. Atlantic coast; Ohio, Wis., N. Méx.

LAVATERA.

Lavatera sp., treemallow.

Colletotrichum malvarum A. Braun and Casp., anthracnose. Calif.

Puccinia malvacearum Bertero, rust. Calif.

LESPEDAZA.

**L. striata*, Japan clover.

Heterodera radiculicola (Greef) Muell., root-knot. Ala.

Microsphaera diffusa Cke. and Pk., powdery mildew. S. C., Ala., Miss.

LIBOCEDRUS.

L. decurrens, incense-cedar.

- Gymnosporangium blasdaleanum* (Diet. and Holw.) Kern, rust. Oreg., Calif.
Herpotrichia nigra Hartig, matting. Calif.
Phoradendron juniperinum libocedri Engelm., mistletoe. Nev., Oreg., Calif.
Polyporus amarus Hedge., pecky heartwood rot. Oreg., Calif.

LIGUSTRUM.

Ligustrum sp., privet.

- Armillaria mellea* (Vahl) Quel., root-rot. Miss.
Bacterium tumefaciens EFS. and Town. (*Phytopomonas tumefaciens* (EFS. and Town.) Com. S. A. B.), crown-gall. Miss.
Cercospora adusta Heald and Wolf, leaf-spot. Tex.
C. ligustri Roum., leaf-spot. Miss.
Eozosporium concentricum Heald and Wolf, leaf-spot. Tex.
Glomerella cingulata (Ston.) Spauld. and Schrenk, anthracnose. Widespread east of Great Plains.
Heterodera radiculicola (Greef) Muell., root-knot. Miss.
Ozonium omnivorum Shear (*Phymatotrichum omnivorum* (Shear) Dug.), root-rot. Tex.
Phyllosticta ovalifolia Brun., leaf-spot. Tex.

LILIUM.

Lilium spp., lily (mostly native species).

- Corticium vagum* Berk. and Curt., stem-rot. Mich.
Uromyces holwayi Lagh., rust. Widespread.

L. longiflorum, Easter lily.

- Botrytis cinerea* Auct., gray-mold. Fla.
Cercospora unicolor Sacc. and Penz., leaf-spot. Fla.
Fusarium sp., wilt. Fla.
Sclerotinia sclerotiorum (Lib.) Mass., wilt. Fla.

LINUM.

L. usitatissimum, flax.

- Alternaria* sp., boll disease. Minn., N. Dak.
Colletotrichum linicolum Peth. and Laf., anthracnose. Mich., Minn., N. Dak., Mont.
Fusarium lini H. L. Bolley, wilt. General in States where flax is grown.
Heterodera radiculicola (Greef) Muell., root-knot.
Macrosporium sp., blight. N. Dak.
Melampsora lini (Schum.) Desm., rust. General.
Phlyctaena linicola Speg., pasmo. Mich., Wis., Minn., N. Dak., S. Dak.
Rhizoctonia sp., root-rot. Minn., N. Dak.
 Heat canker, nonpar. Wis., Minn., N. Dak., S. Dak., Mont., Idaho.

LIQUIDAMBAR.

L. styraciflua, sweetgum.

- Cercospora liquidambaris* Cke. and Ell., leaf-spot. Md., Ga., Gulf States.
C. tuberculans Ell. and Ev., leaf-spot. La., Miss., Mo.
Hymenochaete agglutinans Ell., twig-blight.
Ozonium omnivorum Shear (*Phymatotrichum omnivorum* (Shear) Dug.), root-rot. Tex.
Phoradendron flavescens (Pursh) Nutt., mistletoe. Ohio, Tex.
Septoria liquidambaris Cke. and Ell., leaf-spot. Mass., N. J., Ga.
Stereum subpileatum Berk. and Curt., honeycomb heart-rot. Fla.

LIRIODENDRON.

L. tulipifera, tuliptree.

- Cercospora liriodendri* Ell. and Hark., leaf-spot. Middle Atlantic States, Gulf States.
Cylindrosporium cercosporoides Ell. and Ev., leaf-spot. Md.
Erysiphe polygoni DC., powdery mildew. General over range of host.
Gloeosporium liriodendri Ell. and Ev., anthracnose. Conn., Del., Tex., Ohio.
Myxosporium longisporium Edg., twig canker. N. Y.
Phyllactinia corylea (Pers.) Karst., powdery mildew. N. Y., Ala., Ind., Ill.

LIRIODENDRON—Continued.*L. tulipifera*, tuliptree—Continued.

- Phyllosticta liriodendrica* Sacc., leaf-spot. General over range of host.
Polyporus sulphureus (Bull.) Fr., brown-checked wood-rot.
Rhytisma liriodendri Wallr., tar-spot. Ohio.
Verticillium sp., canker. Ohio.

LOLIUM.*L. multiflorum*, Italian ryegrass.

- Claviceps purpurea* (Fr.) Tul., ergot. Wash., Oreg.
Colletotrichum sp., anthracnose. Wash.
Helminthosporium siccans Drechs., leaf-spot. Md., Va.

L. perenne, perennial ryegrass.

- Claviceps purpurea* (Fr.) Tul., ergot. Va., W. Va., S. Dak., Nebr., Kans., Idaho, Calif.
Colletotrichum graminicolum (Ces.) Wils., anthracnose. Pa.
Gibberella sp., root-rot. Pa.
Helminthosporium siccans Drechs., leaf-spot. Md., Va.
Puccinia coronata Cda., rust. Pacific coast.
P. glumarum (Schm.) Eriks. and Henn., stripe-rust. Wash., Oreg.
P. graminis Pers., stem-rust. Minn.

LONICERA.*Lonicera* spp., honeysuckle.

- Bacterium tumefaciens* EFS. and Town., crown-gall. Conn.
Cercospora antipus Ell. and Holw., leaf-spot. Iowa, Nebr.
C. varia Pk., leaf-spot. Tex.
Fusarium sp., stem-blight. Ohio.
Gloeosporium lonicerae Hark., leaf-spot. Calif.
Leptothyrium periclymeni (Desm.) Sacc. Wis., Idaho.
Marssonina lonicerae Hark., leaf-spot. Colo.
Microsphaera alni (Wallr.) Wint., powdery mildew. Frequent in northern half of United States.
Puccinia festucae Plow., rust. Iowa.

LUPINUS.*L. perennis*, sun-dial lupine.

- Ascochyta pisi* Lib. (*Mycosphaerella pinodes* (Berk. and Blox.) R. E. Stone), leaf-spot.
Cercospora filispora Pk., leaf-spot. N. Y.
C. longispora Pk., leaf-spot. N. Y.
Erysiphe polygoni DC., powdery mildew. Mass., N. Y., N. J., Md., Ohio, Ill., Mich.
Sclerotinia sclerotiorum (Lib.) Mass., stem-rot. N. Y.

L. polyphyllus, Washington lupine.

- Uromyces lupini* Berk. and Curt., rust. Wash.

LYCOPERSICUM.*L. esculentum*, tomato.

- Alternaria* sp. (not *A. solani* nor *M. tomato*), leaf-spot. Calif.
A. solani (Ell. and Mart.) L. R. Jones and A. J. Grout, early-blight. General east of Great Plains; nailhead spot especially in Southern States.
Aplanobacter michiganense EFS. (*Phytomonas michiganense* (EFS.) Com. S. A. B.), bacterial canker (Grand Rapids disease). Mass., Conn., N. J., Pa., Ga., Ohio, Ind., Mich.
Ascochyta lycopersici Brun. (*Didymella lycopersici* Kleb., *Diplodina destructiva* (Plow.) Petr.), leaf-spot. N. J.
Bacillus aroideae Town. (*Erwinia aroidea* (Town.) Com. S. A. B.), soft-rot. Va.
B. carotovorus L. R. Jones (*Erwinia carotovora* (Jones) Com. S. A. B.), soft-rot. N. J., Fla.
Bacterium solanacearum EFS. (*Phytomonas solanaceara* (EFS.) Com. S. A. B.), bacterial wilt. For the most part east of Great Plains and south of Missouri and Ohio Rivers.

LYCOPERSICUM—Continued.*L. esculentum*, tomato—Continued.

- B. vesicatorium* Doidge (*Phytophthora exitiosa* (Gardner and Kendrick) Com. S. A. B.), bacterial spot. N. Y., Pa., Tenn., Ga., Fla., Ind., Ill., Mich., Iowa, Kans.
- Basisporium gallarum* M. Molliard, fruit-rot. Calif.
- Botrytis cinerea* Auct., gray-mold rot. N. J., Ohio, Ky., Ala.
- Cercospora cruenta* Sacc., leaf-spot. S. C., Ala., Iowa.
- Cladosporium fulvum* Cke., leaf-mold. General.
- Colletotrichum phomoides* (Sacc.) Chester, anthracnose. East of Great Plains; Wash., Calif.
- Corticium vagum* Berk. and Curt., stem-rot, soil-rot. General.
- Fusarium lycopersici* Sacc., Fusarium wilt. Conn. to Nebr. and southward, Calif.
- Glomerella cingulata* (Ston.) Spauld. and Schrenk, anthracnose. N. Y., Mich., Fla., La.
- Heterodera radicola* (Greef) Muell., root-knot. General in South.
- Isaria clonostachoides* F. J. Pritchard and W. S. Porte, fruit-rot. Va., D. C.
- Macrosporium tomato* Cke., nailhead spot. Fla. and other Southern States.
- Melanconium* sp., fruit-spot. Ohio, Wis.
- Nematospora lycopersici* A. Schneider, fruit-rot. Calif.
- Olpidium* sp., seedling blight. Wis.
- Oospora lactis parasitica* F. J. Pritchard and W. S. Porte, fruit-rot. N. J., Va., D. C.
- Ozonium omnivorum* Shear (*Phymatotrichum omnivorum* (Shear) Dug.), root-rot. Tex., Ariz.
- Phoma destructiva* Plow. (*Diplodina destructiva* (Plow.) Petr.), ripe-rot, leaf-spot. Widespread.
- Phyllosticta* sp., leaf-spot. Fla.
- Phytophthora* sp. (D. Reddick), stem girdle. N. Y.
- P. infestans* (Mont.) D By., late-blight, damping-off. Atlantic and Pacific Coast States.
- P. terrestris* Sherb., buckeye rot. South Atlantic and Gulf States; Va., Ark., Tenn., Ind.
- Phythium debaryanum* Hesse, damping-off. New England, N. Y., Ohio, Pa., Wash.
- Rhizopus nigricans* Ehr., black-mold rot. Frequent in harvested crop.
- Sclerotinia sclerotiorum* (Lib.) Mass., stem-rot, fruit-rot. General.
- Sclerotium rolfsii* Sacc., stem-rot. Southern States.
- Septoria lycopersici* Speg., leaf-spot. General, but infrequent in West.
- Synchytrium endobioticum* (Schilb.) Perc., wart. Pa.
- Verticillium albo-atrum* Reinke and Berth., wilt. Northern States.
- V. lycopersici* F. J. Pritchard and W. S. Porte, collar rot. N. J., Del., Md.
- Blossom-end rot, nonpar. General.
- Mosaic, undet. General.
- Oedema, nonpar. N. Y., Ind., Fla.
- Streak or winter blight, undet. Common in greenhouses, Mass., N. Y., N. J., Pa., Ohio, Ind., Mich.
- Yellow blight, undet. Western States.

LYONIA.*L. ligustrina*, *maleberry.

- Ezobasidium vaccinii* Wor., hypertrophy. Mass., N. Y., N. J., Fla., Ala.
- Microsphaera alni vaccinii* Berk. and Curt., powdery mildew. Ala.
- Pucciniastrum myrtilli* (Schum.) Arth., rust. Del., Va., Ala.
- Rhytisma andromedae* Fr., tar-spot. N. J., Va.
- R. decolorans* Schw., tar-spot. Me., Mass., N. J., Fla., Ga., Ala.

MACLURA.*M. pomifera*, Osage-orange.

- Cerotelium fici* (Cast.) Arth., rust. S. C., Ga., La.
- Ovularia macluræ* Ell. and A. B. Langlois, cottony leaf-spot. La., Tex.
- Phoradendron flavescens* (Pursh) Nutt., mistletoe. Tex., Ind.
- Phyllosticta macluræ* Ell. and Ev., leaf-spot. N. J.
- Sporodesmium macluræ* Thuem., leaf-spot. Mo.

MAGNOLIA.

Magnolia sp., magnolia.

- Cladosporium fasciculatum* Cda., Tex.
Colletotrichum sp., anthracnose. Mass., S. C., Fla.
Coniothyrium olivaceum grandiflorae Sacc., leaf-spot. Tex.
Phyllosticta cookei Sacc., leaf-spot. N. Y., S. C., Miss., Calif.
P. terminalis Ell. and Mart., leaf-spot. N. J.
Septoria magnoliae Cke., leaf-spot. Fla.

M. acuminata, cucumbertree.

- Phyllactinia corylea* (Pers.) Karst., powdery mildew. Ohio.
Phyllosticta cookei Sacc., leaf-spot. W. Va.

M. glauca, sweetbay.

- Cercospora magnoliae* Ell. and Hark., leaf-spot. N. J.
Cladosporium fasciculatum Cda. N. J.
Dimerosporium magnoliae Tr. and Earle, sooty mold. Miss.
Macrosporium martindalei Ell. and Mart., leaf-spot. N. J.
Phyllosticta cookei Sacc., leaf-spot. N. J., Fla.
P. glauca Cke., leaf-spot. S. C., Fla., Ala.

M. grandiflora, southern magnolia.

- Coniothyrium olivaceum grandiflorae* Sacc., leaf-spot. Tex.
Leptothyrella langloisii (Ell. and Ev.) Sacc. La.
Phyllosticta cookei Sacc., leaf-spot. Fla., Miss., La.
Septoria magnoliae Cke., leaf-spot. S. C., Ga., La., Tex.
S. niphostoma Berk. and Curt., leaf-spot. N. C., S. C., Ga.

MAHONIA.

Mahonia spp. (native western species), hollygrape, Oregon grape.

- Puccinia graminis* Pers., rust. Mich., Mont., Colo., N. Mex., Wash.
P. koeleriae Arth., rust. Mont., Colo., Idaho, Oreg.
P. oxalidis Diet. and Ell., rust. N. Mex.
Uromyces sanguinea (Pk.) Arth., rust. Western States.

MALUS.

M. baccata, Siberian crab apple.

- Bacillus amylovorus* (Burr.) Trev. (*Erwinia amylovora* (Burr.) Com. S. A. B.), blight. Ohio, W. Va., Tex., Wash.
Gymnosporangium globosum Farl., rust. Kans.
G. juniperi-virginianae Schw., rust. Md.
Phyllosticta solitaria Ell. and Ev., blotch. Ohio.
Physalospora malorum (Pk.) Shear (*P. cydoniae* Am. Auct.), black-rot. Ohio.
Venturia inaequalis (Cke.) Aderh., scab. Ohio, Nebr.

M. coronaria, wild sweet crab apple.

- Ascochyta coronaria* Ell. and Davis, leaf-spot. Wis.
Bacillus amylovorus (Burr.) Trev. (*Erwinia amylovora* (Burr.) Com. S. A. B.), blight. W. Va.
Cercospora persicae Sacc., leaf-spot. Ill.
C. pyrina Ell. and Ev., leaf-spot. Wis.
Gymnosporangium juniperi-virginianae Schw., rust. General east of Great Plains.
Nummularia discreta (Schw.) Tul., blister canker. W. Va.
Phyllosticta solitaria Ell. and Ev., blotch. W. Va., Ind.
Physalospora malorum (Pk.) Shear (*P. cydoniae* Am. Auct.), black-rot. N. Y., Ill.
Podosphaera ozyacanthae (DC.) D By., powdery mildew. Wis.

M. ioensis, prairie crab apple.

- Cercospora pyrina* Ell. and Ev., leaf-spot. Wis.
Gymnosporangium juniperi-virginianae Schw., rust. East of Great Plains.
Marssonina coronariae Sacc. and Dearn., leaf-spot. Mo.
Phyllosticta zonata Ell. and Ev., leaf-spot. Iowa.
Venturia inaequalis (Cke.) Aderh., scab. Ill., Wis., Iowa, Nebr.

M. sylvestris, apple.

- Alternaria* sp., fruit-spot, fruit-rot. Reported from 11 scattered States.
A. mali J. W. Roberts, leaf-spot. Va., Md., Tenn., Ark., Mo.

MALUS—Continued.

M. sylvestris, apple—Continued.

- Armillaria mellea* (Vahl) Quel., root-rot. General, especially in Pacific Northwest.
- Bacillus amylovorus* (Burr.) Trev. (*Erwinia amylovora* (Burr.) Com. S. A. B.), blight. General.
- Bacterium tumefaciens* EFS. and Town. (*Phytophthora tumefaciens* (EFS. and Town.) Com. S. A. B.), crown-gall, hairy-root. General.
- Botryosphaeria ribis* Gross. and Dug., black-rot. Va., Ga., Ark.
- Botrytis cinerea* Auct., fruit-rot. Wash.
- Cephalothecium roseum* Cda., pink-rot. General, especially east of Rocky Mts.
- Cercospora mali* Ell. and Ev., leaf-spot. Ala., Miss., La., Tex.
- Clitocybe monadelpha* (Morgan) Sacc., root-rot. Va., W. Va., N. C., Ind., Mo., Ark., Okla., Tex., Colo., Ariz., Wash.
- Comandra pallida* DC., bastard toadflax. Wash.
- Corticium laetum* Karst., limb-blight. La.
- C. stevensii* Burt (*Hypochnus ochroleucus* F. Noack), leaf-blight. N. C., S. C., Ga., Ala., Miss., Tex., Ind.
- Cytospora* sp., canker. Oreg.
- Fomes applanatus* (Pers.) Wallr. (*Ganoderma applanatum* (Pers.) Pat.), white-streaked rot. Ind.
- F. fomentarius* (L.) Fr., white sapwood rot. Mont.
- F. ignarius* (L.) Fr., white heart-rot. Conn., N. Y.
- Fusicoccum pyrorum* C. Chupp and G. L. Clapp, canker. N. Y., Md.
- Gloeodes pomigena* (Schw.) A. S. Colby (*Phyllachora pomigena* (Schw.) Sacc.), sooty blotch. New England to N. C. and westward to Nebr.
- Gloeosporium perennans* Zeller and Childs, perennial canker. Wash., Oreg.
- Glomerella cingulata* (Ston.) Spauld. and Schrenk, bitter-rot. Mass. to Nebr. and southward; occasionally in Pacific Coast States.
- Gymnosporangium blasdaleanum* (Diet. and Holw.) Kern, rust. Oreg.
- G. germinale* (Schw.) Kern, rust. Mass., R. I., Va.
- G. globosum* Farl., rust. New England south to Ga.
- G. juniperi-virginianae* Schw., rust. General east of Great Plains.
- Leptosphaeria coniothyrium* (Fekl.) Sacc., orange pox canker. Middle Atlantic States; Ohio, Ind., Minn., Kans.
- Lepiothyrium pomi* (Mont. and Fr.) Sacc., flyspeck. East of Great Plains; occasionally collected in Northwest.
- Myzosporeum corticolium* Edg. (*Dermatea corticola* (Edg.) Arn.), surface bark canker. New England, N. Y., Pa., Md., Ohio, Mich., S. Dak., Oreg.
- Nectria galligena* Bres., European canker. Me. to Ill. and N. C., Minn., Pacific coast.
- Neofabraea malicorticis* (A. B. Cordley) Jack., anthracnose, black-spot canker. Pacific Northwest; Mont., Nev., Calif.
- Nummularia discreta* (Schw.) Tul., blister canker. East of Rocky Mts., most destructive in Miss. Valley States; N. Dak., S. Dak.
- Ozonium omnivorum* Shear (*Phymatotrichum omnivorum* (Shear) Dug.), root-rot. Ark., Tex., N. Mex., Ariz.
- Penicillium expansum* (Lk.) emend. Thom, blue-mold rot. General in stored fruit.
- Phoma mali* Schulz. and Sacc., twig-blight. Me., Mass., Md., W. Va., Okla., N. Mex.
- P. pomi* Pass., fruit-spot. Me. to N. C., and westward to Ark. and Iowa.
- Phomopsis mali* J. W. Roberts, rough-bark disease. Va., Ohio, Ill., Pacific Coast States.
- Phoradendron flavescens* (Pursh) Nutt., mistletoe. Tex.
- Phyllosticta clypeata* Ell. and Ev., leaf-spot. Oreg.
- P. limitata* Pk., leaf-spot. Mass., N. Y., W. Va., N. C., Ind.
- P. prunicola* Sacc., leaf-spot. Ohio.
- P. solitaria* Ell. and Ev., blotch. East of Great Plains except New England and Fla.
- Physalospora malorum* (Pk.) Shear (*P. cydoniae* Am. Auct.), black-rot, frog-eye. General, especially east of Great Plains.
- Phytophthora cactorum* (Leb. and Cohn) Schroet., fruit-rot. Conn., N. Y., Pa., Va., Ind., Mich., Idaho, Wash.
- Plenodomus fuscomaculans* G. H. Coons, canker. Mich., Calif.

MALUS—Continued.*M. sylvestris*, apple—Continued.

- Podosphaera leucotricha* (Ell. and Ev.) Salm., powdery mildew. General, most destructive in Western States.
- P. oxyacanthae* (DC.) D By., powdery mildew. General.
- Polyporus lacteus* Fr., sap-rot and heart-rot. Va., Ind., Idaho, Wash., Oreg.
- Polystictus versicolor* (L.) Fr., yellowish wood-rot. N. Y., Mo., Kans., Pacific coast.
- Pseudomonas papulans* D. H. Rose, blister spot. Mo.
- Schizophyllum commune* Fr., heart-rot. North of Ohio and Mo. Rivers; Kans., Nebr., Pacific coast.
- Sclerotinia cinerea* (Bon.) Schroet. (*Monilia oregonensis* Barss and Posey), blossom blight. Wash., Oreg.
- S. fructicola* (Wint.) Rehm (*S. americana* (Wormald) Norton and Ezekiel) brown-rot. East of Great Plains; Pacific coast.
- Septobasidium* sp., canker. N. Y., Miss., Tex.
- S. pseudopedicellatum* Burt, canker. N. C.
- S. retiforme* (Berk. and Curt.) Pat., canker. Southern States.
- Stereum purpureum* Pers., associated with silver-leaf. Me., N. Y., Minn., Wash.
- Valsa* spp. (*Cytospora* spp.), die-back, canker. New England, N. Y., Pa., Ill., Minn., Western States.
- Venturia inaequalis* (Cke.) Aderh., scab. Reported from every State except Fla., La., Tex., Ariz., Nev., Utah, Wyo. Most serious in East.
- Volutella fructi* F. L. Stevens and J. G. Hall, spongy dry-rot. Mass., N. Y., Pa., W. Va., N. C., Ind.
- Xylaria* spp., black root-rot. N. Y., Pa., Va., W. Va., Tenn., N. C., S. C., Ga., Ark., Ind., Ill., Mich., Iowa, Kans.
- Bitter-pit (stippen, Baldwin spot), undet. General.
- Black-heart, nonpar. Md., Va., Nebr., Mont.
- Chlorosis, nonpar. Me., N. Y., Pa., S. Dak., N. Mex., Wyo., Wash.
- Jonathan spot, undet. Eastern apple sections to Nebr. and Kans.; Colo., Idaho, Pacific coast.
- Measles, undet. Pa., Md., Va., W. Va., S. C., Ala., Ark., Tex., Ohio, Ill., Mich., Mo., Kans., Colo., N. Mex.
- Mosaic, undet. N. Y.
- Rosette, undet. Del., Md., Kans., Colo., Pacific Northwest.
- Scald, nonpar. General on stored fruit.
- Tan disease, undet. Md., Wash.
- Water-core, nonpar. General.

MANGIFERA.*M. indica*, mango.

- Glomerella cingulata* (Ston.) Spauld. and Schrenk, anthracnose. Fla.
- Phyllosticta mortoni* Fairman, leaf-spot. Fla.

MANIHOT.*M. esculenta*, cassava.

- Cercospora cassavae* Ell. and Ev., leaf-spot. Fla.
- Gloeosporium manihotis* P. Henn., wither-tip. La.

MEDICAGO.*M. maculata*, southern bur clover.

- Cercospora medicaginis* Ell. and Ev., leaf-spot. Southern States.
- Pseudoplea medicaginis* Miles, leaf-spot. Ala.

M. sativa, alfalfa.

- Aplanobacter insidiosum* McC., bacterial root-rot. Ala., Ind., Ill., Wis., Colo.
- Ascochyta imperfecta* Pk., leaf-spot. N. Y., Ky., Ill., Wash.
- Bacterium medicaginis* (Sack.) EFS. (*Phytomonas medicaginis* (Sack.) Com. S. A. B.), bacterial blight. General, especially in Western States.
- B. tumefaciens* EFS. and Town. (*Phytomonas tumefaciens* (EFS. and Town.) Com. S. A. B.), crown-gall. Md., Va., Ky., Ala.
- Cercospora medicaginis* Ell. and Ev., leaf-spot. East of Great Plains.
- Colletotrichum trifolii* S. M. Bain, anthracnose. General east of Great Plains.

MEDICAGO—Continued.*M. sativa*, alfalfa—Continued.

Cuscuta sp., dodder. Frequent where alfalfa is grown.

Fusarium sp., root-rot. S. C., Va., Ohio, N. Dak., Kans., N. Mex., Utah, Nev.

Gloeosporium medicaginis Ell. and Kell., anthracnose. Va., Kans., Okla.

Heterodera radicola (Greef) Muell., root-knot. N. Y., N. J., Tex.

Macrosporium sp., leaf-spot. Me., Pa., N. J., Md., Va., W. Va., La., Tex., Mich., Mo.

M. sarcinaeforme Cav., black-mold. Ill.

Ozonium omnivorum Shear (*Phymatotrichum omnivorum* (Shear) Dug.), root-rot. Ark., Okla., Tex., Southwest.

Peronospora trifoliorum D By., downy mildew. General.

Pleosphaerulina briosiana Poll., leaf-spot. Va., Ky., Ala., Ga., Ind., Ill., Wis., Minn., Iowa, Mo., S. Dak., Kans.

Pseudopeziza medicaginis (Lib.) Sacc., leaf-spot. General.

Pyrenopeziza medicaginis Fekl., yellow leaf-blotch. General.

Rhizoctonia crocorum (Pers.) DC., violet root-rot. Middle Atlantic States; Miss. Valley; Pacific Northwest.

Sclerotinia trifoliorum Eriks., stem-rot. Mostly east of Miss. River; Pacific coast.

Sclerotium rolfsii Sacc., stem-rot. Va., La.

Stagonospora sp., leaf-spot. N. Y., N. J., Del., Ill.

Thielavia basicola (Berk. and Br.) Zopf, black root-rot. Mass., N. J., Tex.

Tylenchus dipsaci (Kuehn) Bast., stem nematode. Wyo., Colo., N. Mex., Idaho, Oreg., Calif.

Uromyces medicaginis Pass., rust. General.

Urophlyctis alfalfae (Lagh.) Magn., crown-wart. West of Rocky Mts.

Girdle, undet. Ariz.

Yellowing, undet. General, especially in the eastern United States.

MELIA.*M. azedarach*, chinaberry.

Cercospora leucosticta Ell. and Ev., leaf-spot. Ala., Miss., La.

C. meliae Ell. and Ev., leaf-spot. La.

Nectria cinnabarina (Tode) Fr., canker. S. C.

Ozonium omnivorum Shear (*Phymatotrichum omnivorum* (Shear) Dug.), root-rot. Tex., Ariz.

Phoradendron flavescens (Pursh) Nutt., mistletoe. Tex.

Phyllosticta meliae Ell. and Ev., leaf-spot. La.

M. azedarach umbraculiformis, Texas umbrella-tree.

Ozonium omnivorum Shear (*Phymatotrichum omnivorum* (Shear) Dug.), root-rot. Tex.

MELILOTUS.*M. alba*, white sweetclover.

Ascochyta meliloti (Trel.) Davis, leaf-spot. Occurs in widely scattered States.

Cercospora davisii Ell. and Ev., leaf-spot. Ala., Md., Ind., Wis., Minn., Iowa, Kans.

Colletotrichum trifolii S. M. Bain, anthracnose. Ill.

Corticium vagum Berk. and Curt., stem-rot. Ala., Mich., Mont., Wash.

Fusarium sp., root-rot. Tenn., N. Dak., N. Mex.

Gloeosporium sp., anthracnose. Ill., Wis., Kans.

Heterodera radicola (Greef) Muell., root-knot. S. C., Ala.

Mycosphaerella lethalis R. E. Stone, stem-spot. N. Y.

Ozonium omnivorum Shear (*Phymatotrichum omnivorum* (Shear) Dug.), root-rot. Tex.

Peronospora trifoliorum D By., downy mildew. Wis.

Sclerotinia trifoliorum Eriks., root-rot. Ky., Wash.

Stagonospora meliloti (Lasch) Petr., leaf-spot. Wis.

Mosaic, undet. Ark., N. Dak.

MENISPERMUM.

M. canadense, moonseed.

Cercospora menispermi Ell. and Holw., leaf-spot. W. Va., Iowa, Kans.

Entyloma menispermi Farl. and Trel., smut. North-Central States.

Phyllosticta abortiva Ell. and Kell., leaf-spot. Kans.

Ramularia contexta Ell. and Ev., leaf-spot. N. Dak.

MENTHA.

M. piperita, peppermint.

Puccinia menthae Pers., rust. Mass., Calif.

M. spicata, spearmint.

Phyllactinia corylea (Pers.) Karst., powdery mildew. Wash.

Phyllosticta decidua Ell. and Kell., leaf-spot. Ohio.

Puccinia menthae Pers., rust. Mass., N. Y., Ohio, Mich., Ind., Ky., Wis., Wash.

MIRABILIS.

M. jalapa, common four-o'clock.

Albugo platensis (Speg.) Sw., white-rust. Tex.

Cercospora mirabilis Tharp, leaf-spot. Tex.

MORUS.

Morus sp., mulberry.

Armillaria mellea (Vahl) Quel., root-rot. Del.

Bacterium mori (Boyer and Lambert) emend. EFS. (*Phytomonas mori* (Boyer and Lambert) Com. S. A. B.), mulberry blight. Widespread.

Cercospora missouriensis Wint., leaf-spot. Tex.

C. moricola Cke., leaf-spot. Widespread east of Great Plains.

C. pulvinulata Sacc. and Wint., leaf-spot. Nebr., Kans.

Cercospora mori Pk., leaf-spot. Nebr., Tex.

Exosporium sp., leaf-spot. Fla.

Gibberella moricola Ces. and DeNot., twig-blight. Pa., Wis.

Hymenochaete agglutinans Ell., heart-rot. Md.

Myxosporium diedickei Syd., twig-blight. Tex., Wash.

Mycosphaerella morifolia (Fekl.) Lindau, leaf-spot. Ind.

Nectria sp., bark disease, canker. N. J., Ky., Ala., Ark., Ind., Kans.

Ozonium omnivorum Shear (*Phymatotrichum omnivorum* (Shear) Dug.), root-rot. Tex., Ariz.

Phlebotoma maculans (Bereng.) Allesch., leaf-spot. Widespread east of Great Plains.

P. moricola (Pass.) Sacc., leaf-spot. Pa., Md., Kans.

Phyllactinia corylea (Pers.) Karst., powdery mildew. Ohio.

Sclerotinia carunculoides E. A. Siegler and A. Jenkins, pop-corn disease. S. C., Ga., Ala., Miss., La., Tex.

Ucinula geniculata W. R. Gerard, powdery mildew. Widespread east of Great Plains.

MUSA.

Musa sp., banana.

Fusarium sp., Panama wilt. Fla.

Gloeosporium musarum Cke. and Mass., stem-rot, fruit-rot. Fla.

Heterodera radicecola (Greef) Muell., root-knot. Fla.

MYRICA.

Myrica spp. (*M. cerifera* and *M. carolinensis*), bayberry, waxmyrtle.

Cercospora diffusa Ell. and Ev., leaf-spot. N. J.

C. myricae Tr. and Earle, leaf-spot. Miss.

C. penicillus Ell. and Ev., leaf-spot. N. J., Miss.

Gymnosporangium myricatum (Schw.) F. D. Fromme, rust. Mass., N. J., Pa.

Phyllosticta myricae Cke., leaf-spot. N. J., S. C., Fla.

Ramularia monilioides Ell. and Mart., leaf-spot. Mass., N. Y.

Septoria myricae Ell. and Ev., leaf-spot. N. J.

NARCISSUS.

Narcissus sp., narcissus, jonquil.

Botrytis sp., blight. Wash.

Tylenchus dipsaci (Kuehn) Bast., bulb nematode. Ill., Oreg., Calif.

Mosaic (gray disease), undet. Wash.

NERIUM.

N. oleander, oleander.

Bacterium savastanoi EFS. (*Phytomonas savastanoi* (EFS.) Com. S. A. B.), gall. Ariz.

Cercospora nerrella Sacc., leaf-spot. La., Tex.

Macrosporium nerii Cke., leaf-spot. Ga., Fla., Miss., Calif.

Phyllosticta nerii West., leaf-spot. Fla., La., Mich.

Septoria sp., specked leaf-spot. Fla.

S. oleandrina Sacc., leaf-spot. Fla., La.

NICOTIANA.

N. tabacum, tobacco.

Bacillus carotovorus L. R. Jones (*Erwinia carotovora* (Jones) Com. S. A. B.), hollow-stalk. Conn.

Bacterium angulatum F. D. Fromme and T. J. Murray, angular leaf-spot, black-fire. Mass., Conn., N. Y., Md., Va., N. C., S. C., Tenn., Ky., Ind., Wis.

B. melleum James Johnson, bacterial leaf-spot. Ky., Wis.

B. solanacearum EFS. (*Phytomonas solanaceara* (EFS.) Com. S. A. B.), bacterial wilt, Granville wilt. Southern States; Ohio.

B. tabacum Wolf and A. C. Foster (*Phytomonas tabaca* (Wolf and Foster) Com. S. A. B.), wild-fire. General.

Cercospora nicotianae Ell. and Ev., frog-eye. Atlantic Coast States; Wis., Tex.

Corticium vagum Berk. and Curt., sore-shin. General.

Fusarium affine C. M. Slagg, leaf-spot. Conn., Ky., Wis.

F. oxysporum nicotianae James Johnson, wilt. Md., Ohio, Ky., Tenn.

Heterodera radicola (Greef) Muell., root-knot. Southern States.

Macrosporium longipes Ell. and Ev., brown-spot. Pa., N. C., Mo.

M. tabacinum Ell. and Ev., white-speck. Mass., Conn., N. C., Ohio, Mo.

Olpidium sp., seedling blight. Wis.

Orobancha ramosa L., broom-rape. Ohio, Ky.

Peronospora hyoscyami D By., downy mildew. Ga., Fla.

Phyllosticta nicotiana Ell. and Ev., leaf-spot. Mass., Va., N. C.

Phytophthora nicotianae (Speg.) Van Breda de Haan, black-shank. Ga., Fla.

Pythium debaryanum Hesse, damping-off. General.

Sclerotinia sclerotiorum (Lib.) Mass., stem-rot. Conn.

Sclerotium rolfsii Sacc., stem-rot. N. C.

Thielavia basicola (Berk. and Br.) Zopf, black root-rot. General.

Brown root-rot, undet. Mass., Conn.

Frenching, undet. Va., N. C., Ky., Ohio, Wis.

Leaf-spots including "rust," firing, ring-spot, etc., nonpar. Widespread.

Mosaic, undet. General.

Sand-drown, nonpar. N. C.

NYSSA.

N. aquatica, big tupelo.

Aplopsora nyssae (Ell.) E. B. Mains, rust. Miss.

Phyllosticta nyssae Cke., leaf-spot. Ga., Ala.

N. sylvatica, *sour gum, tupelo, *pepperidge.

Leptothyrium dryinum Sacc., leaf-spot. Ala.

Phoradendron flavescens (Pursh) Nutt., mistletoe. Tex.

Phyllosticta nyssae Cke., leaf-spot. N. Y.

Pirostoma nyssae L. R. Tehon, leaf-spot. Ill.

OLEA.

O. europaea, olive.

Armillaria mellea (Vahl) Quel., root-rot. Calif.

Bacterium savastanoi EFS. (*Phytomonas savastanoi* (EFS.) Com. S. A. B.), knot. Calif.

OLEA—Continued

O. europaea, olive—Continued.

Cycloconium oleaginum Cast., leaf-spot. Calif.

Ozonium omnivorum Shear (*Phymatotrichum omnivorum* (Shear) Dug.), root-rot. Tex.

ORYZA.

O. sativa, rice.

Cercospora oryzae Miyake, leaf-spot. La.

Corticium vagum Berk. and Curt., foot-rot. Ark.

Fusarium minimum Fckl., wilt. La.

Helminthosporium sp., leaf-spot. S. C., Ark.

H. oryzae Van Breda de Haan, blight. Fla., La.

Ophiobolus sp., foot-rot. Ark.

Phoma glumarum Ell. and Tr., glume-blight. Miss.

Paricularia grisea (Cke.) Sacc., blast. Occurs in all States where rice is grown.

Sclerotium oryzae Catt., stem-rot. La., Ark.

S. rolfii Sacc., seedling blight. La.

Sphaerotheca sp., powdery mildew. N. C.

Tilletia horrida Tak., black-smut. S. C., Ga., La., Ark.

Ustilaginoidea virens (Cke.) Tak., green-smut. Ga., La.

Straighthead, nonpar. General in States in which rice is grown.

OSMANTHUS.

Osmanthus sp., osmanthus.

Phyllosticta oleae Ell. and Mart., leaf-spot. Fla.

P. sinuosa Ell. and Mart., leaf-spot. Fla., Miss.

P. terminalis Ell. and Mart., leaf-spot. Fla.

OSTRYA.

O. virginiana, hophornbeam.

Fomes igniarius (L.) Fr., white heart-rot. N. Dak., S. Dak.

Gloeosporium robergiae Desm., leaf-spot. Wis.

G. robergiae dendriticum Davis, leaf-spot. Pa.

Microsphaera alni (Wallr.) Wint., powdery mildew. N. Y., Ill., Iowa.

Phyllactinia corylea (Pers.) Karst., powdery mildew. General over range of host.

Septoria ostryae Pk., leaf-spot. N. Y.

Taphrina virginica Seym. and Sadeb., leaf-spot. N. H., Mass., Ala., Wis. Iowa.

OXYDENDRUM.

O. arboreum, sourwood.

Cercospora oxydendri Tr. and Earle, leaf-spot. Ala.

Phyllosticta oxydendri Ell. and Ev., leaf-spot. W. Va.

PAEONIA.

Paeonia sp., peony.

Armillaria mellea (Vahl) Quel., root-rot. Mich., Oreg.

Bacterium tumefaciens EFS. and Town. (*Phytomonas tumefaciens* (EFS. and Town.) Com. S. A. B.), crown-gall. Mich.

Botrytis sp., seed-rot. Pa.

B. paeoniae Oud., blight. Widespread.

Cerospora varicolor Wint., leaf-spot. Ind., Ky., Mo., Nebr.

Cladosporium paeoniae Pass., leaf-mold. General.

Corticium vagum Berk. and Curt., stem-rot. Minn.

Fusarium sp., root-rot, stem-rot. Ind., Mo., Nebr.

Heterodera radicolica (Greef) Muell., root-knot. N. Y., Pa., S. C., Miss., Ohio, Ind., N. Dak., Nebr., Wash.

Phyllosticta commonsii Ell. and Ev., leaf-spot. Del., Ind.

Phytophthora sp., blight. Conn., Pa., Ind., Kans.

Septoria paeoniae berolinensis Allesch., leaf-spot. N. Y.

Verticillium alboatrum Reinke and Berth., wilt. Kans.

Mosaic, undet. Mass., Conn., Va., Ohio, Kans., Wash.

PANAX.

P. quinquefolium, American ginseng.

Alternaria panax Whet., blight. General; N. Y. to Minn. southward to Kans. and N. C.

Botrytis sp., gray-mold. Conn., N. Y., Mich., Wash.

Corticium vagum Berk. and Curt., stem-rot. N. Y., Wash.

Fusarium sp., wilt. N. Y., Ala., Ohio, Mo.

Heterodera radicecola (Greef) Muell., root-knot. N. Y., Pa., Ohio, Mich., Wis.

Pestalozzia funerea Desm., leaf anthracnose. Mo.

Phytophthora cactorum (Leb. and Cohn) Schroet., blight, downy mildew. Conn., N. Y., Pa., Ohio, Ind., Mich., Iowa, Wash.

Ramularia destructans C. L. Zinssmeister, root-rot. Wis.

R. panacicola C. L. Zinssmeister, root-rot. N. Y., Wis.

Sclerotinia panacis W. H. Rankin, black-rot. N. Y., Mich., Wis.

S. sclerotiorum (Lib.) Mass., white-rot. N. Y., Pa., Ohio, Mich., Wis.

S. smilacina E. J. Durand, black-rot. N. Y., Mich., Wis.

Thielavia basicola (Berk. and Br.) Zopf, black root-rot. General where ginseng is grown.

Vermicularia dematium (Pers.) Fr., stem anthracnose. N. Y., Va., N. C., Tenn., Ohio, Ill., Minn., Mo.

Verticillium albo-atrum Reinke and Berth., wilt. N. Y., Pa., N. J., Tenn., Ky., Ohio, Mich., Ind.

Damping-off, associated with various fungi. General.

Papery leaf-spot, nonpar. N. Y., Mich.

Soft-rot, undet. N. Y., Pa., Ohio, Ind.

PANICUM.

P. miliaceum, proso millet, broomcorn millet.

Bacterium panici C. Elliott, bacterial stripe. Wis., S. Dak.

Fusarium rhizochromatistes C. P. Sideris, root-rot. Calif.

Phyllachora graminis (Pers.) Fckl., black-blotch. Tex.

Piricularia grisea (Cke.) Sacc., leaf-spot. Minn., Ohio.

Puccinia emaculata Schw., rust. Ind.

Sclerospora graminicola (Sacc.) Schroet., downy mildew. Wis., Minn., Iowa, N. Dak., S. Dak.

Sorosporium syntherismae (Pk.) Farl., smut. N. J., Wis., Minn., Mo., N. Dak., Nebr.

Ustilago panici-miliacei (Pers.) Wint., smut. N. Dak., Colo., Wash.

PARKINSONIA.

P. aculeata, parkinsonia.

Cylindrosporium parkinsoniae Heald, leaf-spot. Tex.

Dimerosporium parkinsoniae Heald and Wolf, sooty mold. Tex.

Phyllosticta parkinsoniae Ell. and Ev., leaf-spot. Tex.

PASTINACA.

P. sativa, parsnip.

Bacillus carotovorus L. R. Jones (*Erwinia carotovora* (Jones) Com. S. A. B.), soft-rot. Conn., Mass., Minn.

Bacterium tumefaciens EFS. and Town. (*Phytoplasma tumefaciens* (EFS. and Town.) Com. S. A. B.), crown-gall. Va.

Cercospora apii pastinacae Farl., leaf-spot. North Atlantic and North-Central States.

Corticium vagum Berk. and Curt., stem-rot. Tex., Wash.

Heterodera radicecola (Greef) Muell., root-knot. Va., Ala., La., Ohio, Ind., Kans.

Ozonium omnivorum Shear (*Phymatotrichum omnivorum* (Shear) Dug.), root-rot. Tex.

Ramularia pastinacae (Karst.) Lindr. and Vester., leaf-spot. N. Y., Ind., N. Dak.

Sclerotinia sclerotiorum (Lib.) Mass., watery soft-rot. Ind.

Septoria pastinacina Sacc., leaf-spot, blight. N. Y., Utah.

PAULOWNIA.

P. tomentosa, *princess tree.

Ascochyta paulowniae Sacc. and Brun., leaf-spot. D. C.

Phyllosticta paulowniae Sacc., leaf-spot. N. Y., D. C.

PELARGONIUM.

Pelargonium sp., geranium.

Alternaria sp., leaf-spot. Mass., La., Mich., Calif.

Bacterium erodii I. M. Lewis, bacterial leaf-spot. Conn., Pa., N. Y., Miss., Ohio, Ind., Ill., Wash.

B. pelargoni N. A. Brown, bacterial leaf-spot. Mass., N. J., Md., Va., D. C.

Botrytis cinerea Auct., gray-mold. Conn., Md., La., Ohio, Mich., Minn., Kans.

Cercospora brunckii Ell. and Gall., leaf-spot. Ala., Miss., Tex.

Pythium complectens H. Braun, stem-rot. D. C., Okla.

PERSEA.

P. americana, avocado.

Cercospora sp., blotch. Fla.

Glomerella cingulata (Ston.) Spauld. and Schrenk, anthracnose, leaf-spot, fruit-spot. Fla., Ga., Tex.

Phyllosticta sp., leaf-spot. Fla.

Pythiacystis citrophthora E. H. and R. E. Smith, bark disease. Calif.

Sporotrichum citri Butl. (*Sphaceloma fawcettii* A. Jenkins), scab. Fla.

P. borbonia, redbay.

Helminthosporium fumosum Ell. and Mart., leaf-blotch. Fla.

Phyllosticta micropuncta Cke., leaf-spot. D. C., Fla., Miss., La., Tex.

PETROSELINUM.

P. hortense, parsley.

Cercospora apii Fresen., leaf-spot. N. J.

Corticium vagum Berk. and Curt., root canker. N. Y.

Heterodera radiculicola (Greef) Muell., root-knot. Tex.

Ozonium omnivorum Shear (*Phymatotrichum omnivorum* (Shear) Dug.), root-rot. Tex.

Sclerotinia sclerotiorum (Lib.) Mass., stem-rot. Conn., N. Y., Pa., Va., La., Tex.

Septoria petroselini Desm., leaf-spot. Conn., N. J.

PETUNIA.

P. hybrida, petunia.

Ascochyta petuniae Speg., leaf-spot.

Cercospora sp., leaf-blotch. Fla.

Corticium vagum Berk. and Curt., stem-rot. Pa.

Heterodera radiculicola (Greef) Muell., root-knot.

Macrosporium sarcinula parasiticum Thuem., black stalk-rot. Tex.

Mosaic, undet. Conn., Pa., S. C., La., Iowa.

PHASEOLUS.

P. acutifolius latifolius, tepary bean.

Fusarium sp., wilt. Calif.

F. martii phaseoli Burk., dry root-rot. N. Y.

Ozonium omnivorum Shear (*Phymatotrichum omnivorum* (Shear) Dug.), root-rot. Tex.

Uromyces appendiculatus (Pers.) Lk., rust. Tex., Calif.

P. angularis, adzuki bean.

Amerosporium oeconomicum Ell. and Tr., leaf-spot. Va.

Bacterium phaseoli EFS. (*Phytomonas phaseoli* (EFS.) Com. S. A. B.), bacterial blight. Ind.

Fusarium martii phaseoli Burk., dry root-rot. N. Y.

F. vasinfectum Atk., wilt. Ala.

Mosaic, undet. Ind.

P. aureus, mung bean.

Bacterium phaseoli EFS. (*Phytomonas phaseoli* (EFS.) Com. S. A. B.), bacterial blight. Ind.

Sclerotinia sclerotiorum (Lib.) Mass., stem-rot. Va.

Mosaic, undet. Ind.

PHASEOLUS—Continued.

P. coccineus, Scarlet Runner bean.

Colletotrichum lindemuthianum (Sacc. and Magn.) Briosi and Cav. (*Glomerella lindemuthiana* Shear), anthracnose.

Fusarium martii phaseoli Burk., root-rot. N. Y.

P. lunatus, civet bean, and *P. lunatus macrocarpus*, Lima bean.

Bacterium phaseoli EFS. (*Phytomonas phaseoli* (EFS.) Com. S. A. B.), leaf-spot. Occurs scattering throughout Eastern States.

B. viridifaciens W. B. Tisdale and M. M. Williamson, bacterial leaf-spot. N. Y., Ind., Wis.

Cercospora cruenta Sacc., leaf-spot. N. Y., Miss., Mo., Tex.

C. phaseolorum Cke., leaf-spot. La.

Colletotrichum lindemuthianum (Sacc. and Magn.) Briosi and Cav. (*Glomerella lindemuthiana* Shear), anthracnose. Conn., N. Y., Pa., W. Va., La., Kans.

Corticium vagum Berk. and Curt., stem-rot. Pa., Calif.

Diaporthe phaseolorum (Cke. and Ell.) Sacc., pod-blight. Widespread in eastern United States.

Erysiphe polygoni DC., powdery mildew. Conn., Calif.

Fusarium sp., root-rot. Ohio, Calif.

F. martii phaseoli Burk., dry root-rot. N. Y.

Heterodera radiculicola (Greef) Muell., root-knot. Calif.

Nematospora phaseoli S. A. Wingard, yeast-spot. Va., Tenn., Ala., Ill.

Ozonium omnivorum Shear (*Phymatotrichum omnivorum* (Shear) Dug.), root-rot. Tex.

Phyllosticta phaseolina Sacc., leaf-spot. N. J., W. Va., Fla., Ind., Mich.

Phytophthora phaseoli Thax., downy mildew. Atlantic Coast States; W. Va., Ky., Ohio, Calif.

Sclerotinia sp., stem-rot. Ind.

Uromyces appendiculatus (Pers.) Lk., rust. Pa., Md., Va., Ohio, S. C., La., Calif.

Mosaic, undet. W. Va., Ga., Ind., Mo.

P. vulgaris, bean.

Alternaria fasciculata (Cke. and Ell.) L. R. Jones and A. J. Grout, leaf-spot. La., Mich., Ill., N. Dak., Utah.

Bacillus lathyri Manns and Taub., streak. Del.

Bacterium flaccumfaciens Hedges (*Phytomonas flaccumfaciens* (Hedges) Com. S. A. B.), bacterial wilt. Md., Va., Mich., S. Dak., Mont., Oreg.

B. phaseoli EFS. (*Phytomonas phaseoli* (EFS.) Com. S. A. B.), blight. General.

B. solanacearum EFS. (*Phytomonas solanaceara* (EFS.) Com. S. A. B.), bacterial wilt. Fla.

Botrytis cinerea Auct., gray-mold rot. N. Y., Miss., Tex.

Cercospora cruenta Sacc., leaf-blotch. Fla., Ga.

Colletotrichum caulicolum Heald and Wolf, stem canker. Tex.

C. lindemuthianum (Sacc. and Magn.) Briosi and Cav. (*Glomerella lindemuthiana* Shear), anthracnose. General.

Corticium vagum Berk. and Curt., stem-rot. General.

Erysiphe polygoni DC., powdery mildew. Widespread.

Fusarium martii phaseoli Burk., dry root-rot. General.

Heterodera radiculicola (Greef) Muell., root-knot. Southern States; Calif.

Isariopsis griseola Sacc., angular leaf-spot. Atlantic Coast States; Fla., Miss.

Microsphaera diffusa Cke. and Pk., powdery mildew. Ga.

Ozonium omnivorum Shear (*Phymatotrichum omnivorum* (Shear) Dug.), root-rot. Okla., Tex.

Phoma sp., stem-rot. Ohio, Ark.

Phyllosticta phaseolina Sacc., leaf-spot. Conn., N. Y., N. J., Va., W. Va., Ind., Miss., La., Tex.

Pythium debaryanum Hesse, damping-off. Del., N. J., Ohio.

Sclerotinia sclerotiorum (Lib.) Mass., stem-rot. Middle Atlantic and Gulf States; W. Va., Mich., Ind.

Sclerotium rolfsii Sacc., stem-rot. Southern States.

Thielavia basicola (Berk. and Br.) Zopf, black root-rot. N. H., N. Y.

Uromyces appendiculatus (Pers.) Lk., rust. General.

Mosaic, undet. General.

PHILADELPHUS.

Philadelphus spp., *syringa, mockorange.

Cercospora angulata Wint., leaf-spot. Mo.

Gymnosporangium gracilens (Pk.) Kern and Bethel, rust. Colo., Utah, N. Mex.

Phyllactinia corylea (Pers.) Karst., powdery mildew. Mont.

Ramularia philadelphi Sacc., leaf-spot. Wash.

Septoria philadelphi Ell. and Ev., leaf-spot. Wash.

PHEUM.

P. pratense, timothy.

Cercospora graminicola Tr. and Earle, leaf-spot. Miss.

Claviceps microcephala (Wallr.) Tul., ergot. Ind., Ky., Alaska.

C. purpurea (Fr.) Tul., ergot. Vt., Pa., Ind., Minn.

Colletotrichum graminicolum (Ces.) Wils., anthracnose. Pa., Ohio, Ind., Minn.

Entyloma crastophilum Sacc., smut. Ill., Wis., Iowa.

Erysiphe graminis DC., powdery mildew. Minn.

Heterosporium phlei C. T. Gregory, leaf-spot. N. Y., Pa.

Ophiobolus graminis Sacc., take-all. N. Y.

Puccinia coronata Cda., crown-rust. Iowa.

P. graminis Pers., stem-rust. General.

Scolecotrichum graminis Fckl., leaf-spot. Widespread in Northern States.

Septoria sp., leaf-spot. Pa., Ill.

Sporotrichum poae Pk., silver top. N. Y., Ind., Iowa.

Ustilago striaeformis (West.) Niessl, stripe-smut. General.

PHLOX.

Phlox spp., phlox.

Ascochyta phlogis phlogina Fairman, leaf-spot. Mass.

Bacterium tumefaciens EFS. and Town. (*Phytomonas tumefaciens* (EFS. and Town.) Com. S. A. B.), crown-gall. N. J.

Cercospora amphakodes Ell. and Hals., leaf-spot. Ind., Wis., Iowa.

C. phlogina Pk., leaf-spot. Va., Minn.

Erysiphe cichoracearum DC., powdery mildew. General.

Heterodera radicolica (Greef) Muell., root-knot. Mass.

Leptosphaeria phlogis Oud., leaf-spot. Md., Ind., Minn., Iowa, Nebr.

Phyllactinia corylea (Pers.) Karst., powdery mildew. Ohio.

Puccinia douglasii Ell. and Ev., rust. N. J., Pa., Nebr., Western States.

P. plumbaria Pk., rust. Ill., Iowa, Nebr., Western States.

Septoria divaricata Ell. and Ev., leaf-spot. N. Y., Va., Ill.

Sclerotium rolfsii Sacc., stem-rot. Ill.

Sphaerotheca humuli (DC.) Burr., powdery mildew. Ohio, Kans.

Tylenchus dipsaci (Kuehn) Bast., stem nematode. N. J.

Uromyces polemonii (Pk.) Arth., rust. S. C., Miss., Ind., Ill., Wis., Iowa.

PHOENIX.

P. canariensis, Canary Island date palm.

Exosporium palmivorum Sacc., leaf-spot. La., Tex.

Graphiola phoenicis (Moug.) Poit., false smut. Fla., La., Miss., Tex., Calif.; in hothouses in North.

P. dactylifera, date palm.

Exosporium palmivorum Sacc., leaf-spot. La.

Graphiola phoenicis (Moug.) Poit., false smut. Fla., Tex., Ariz., Calif.

P. reclinata, Senegal date palm.

Graphiola phoenicis (Moug.) Poit., false smut. S. C.

PHOTINIA.

P. arbutifolia, Christmasberry.

Cercospora heteromeles Hark., leaf-spot. Calif.

Fabraea maculata (Lév.) Atk., leaf-spot. Calif.

Fusicladium photinicola R. L. McClain, scab. Calif.

Phyllosticta heteromeles Cke. and Hark., leaf-spot. Calif.

Septoria photiniae Berk. and Curt., leaf-spot. Calif.

PHYLLOSTACHYS.

- Phyllostachys* sp., bamboo.
Cylindrosporium bambusae Miyake and Hara. Ga.
Melanconium bambusae Turconi. Ga.
Schirrhia bambusae Turconi. Ga.
P. bambusoides, Japanese timber bamboo.
Coniosporium shiraianum (Syd.) Bub. Fla.
Puccinia arundinariae Schw., rust. Fla.
P. melanocephala Syd., rust. Ga., Fla.
Ustilago shiraiana P. Henn., smut. Fla., La., Calif.
P. nigra, blackjoint bamboo.
Ustilago shiraiana P. Henn., smut. Fla., La., Calif.

PHYSOCARPUS.

- P. opulifolius*, ninebark.
Gloeosporium neilliae Hark., anthracnose. Calif.
Marssonia lonicerae Hark., leaf-spot. Wis.
M. neilliae Hark., leaf-spot. Calif.
Ramularia ulmariae Cke., leaf-spot. N. Y.
Sphaerotheca humuli (DC.) Burr., powdery mildew. Wis.

PICEA.

- P. canadensis*, white spruce.
Fomes pinicola Fr., brown crumbly rot. N. Y.
F. roseus (Alb. and Schw.) Fr., brown pocket rot. General.
Melampsoropsis pyrolae (DC.) Arth., rust. Me.
Pythium debaryanum Hesse, damping-off.
Razoumofskya pusilla (Pk.) O. Kuntze, mistletoe. Northeastern States.
Trametes pini (Brot.) Fr. (*Fomes pini* (Thore) Karst.), honeycomb rot. Vt., N. Y.
P. engelmanni, Engelmann spruce.
Chrysomyxa weirii Jack., rust. Mont., Idaho, Oreg.
Corticium vagum Berk. and Curt., damping-off. D. C., Calif.
Echinodontium tinctorium Ell. and Ev., brown stringy rot. Mont., Idaho, N. Mex.
Fomes officinalis (L.) Fr., reddish brown rot.
F. pinicola Fr., brown crumbly rot. Mont.
F. roseus (Alb. and Schw.) Fr., brown pocket rot.
Herpotrichia nigra Hartig, matting. Colo., Wyo., Idaho, Oreg.
H. quinqueseptata Weir, brown felt-blight. Idaho.
Hydnum sp., honeycomb rot.
Melampsorella elatina (Alb. and Schw.) Arth., rust. Idaho.
Melampsoropsis ledicola (Pk.) Arth., rust. Colo.
M. pyrolae (DC.) Arth., rust. Mont.
Peridermium coloradense (Diet.) Arth. and Kern, rust witches'-broom. Northern Rocky Mts.; Pacific Northwest.
Polyporus dryadeus (Pers.) Fr., heart-rot. Pacific Northwest.
P. schweinitzii Fr., red-brown butt-rot.
P. sulphureus (Bull.) Fr., brown-checked wood-rot. Me.
Pythium debaryanum Hesse, damping-off.
Razoumofskya douglasii microcarpa Engelm., mistletoe. Idaho, Colo., Mont., Ariz., N. Mex.
R. laricis Piper, mistletoe. Mont.
Sparassis radicata Weir, yellow root-rot. Mont., Pacific Northwest.
Trametes pini (Brot.) Fr. (*Fomes pini* (Thore) Karst.), honeycomb rot. Mont., Idaho.
P. excelsa, Norway spruce.
Melampsorella elatina (Alb. and Schw.) Arth., rust. Mont., Wyo.
P. mariana, black spruce, and *P. rubra*, red spruce.
Fomes annosus Fr., white spongy rot. Me.
F. pinicola Fr., brown crumbly rot. Me.
Melampsoropsis abietina (Alb. and Schw.) Arth., leaf blister rust. N. H., Mich.
M. cassandrae (Pk. and Clint.) Arth., leaf blister rust. Mich., Minn.
M. ledicola (Pk.) Arth., leaf blister rust. Me., Minn.
Polyporus borealis Fr., cuboidal wood-rot. Minn.

PICEA—Continued.

P. mariana, black spruce, and *P. rubra*, red spruce—Continued.

P. schweinitzii Fr., red-brown butt-rot. Minn.

Razoumofskya pusilla (Pk.) O. Kuntze, witches'-broom. New England, N. Y., Mich.

Trametes pini (Brot.) Fr. (*Fomes pini* (Thore) Karst.), honeycomb rot. Me., Minn.

P. sitchensis, Sitka spruce.

Fomes officinalis Fr., reddish brown-rot. Wash.

F. pinicola Fr., brown crumbly rot. General within range of host.

F. roseus (Alb. and Schw.) Fr., brown pocket rot. General within range of host.

Lophodermium pinastri (Schrad.) Chev., needle cast. Alaska.

Melampsoropsis ledicola (Pk.) Arth., leaf blister rust. Wash., Alaska.

Polyporus berkeleyi Fr., string and ray rot. Calif.

P. schweinitzii Fr., red-brown butt-rot. Oreg.

Pythium debaryanum Hesse, damping-off.

Trametes pini (Brot.) Fr. (*Fomes pini* (Thore) Karst.), honeycomb rot. Oreg.

PINUS.

P. albicaulis, whitebark pine.

Fomes pinicola Fr., brown crumbly rot. General within range of host.

Neopeckia coulteri (Pk.) Sacc., brown felt-blight. Idaho, Calif.

Polyporus schweinitzii Fr., red-brown butt-rot.

Razoumofskya cyanocarpa (A. Nelson) P. A. Rydberg, mistletoe. Idaho, Mont.

R. laricis Piper, mistletoe. Mont.

P. attenuata, knobcone pine.

Cronartium cerebrum (Pk.) Hedge. and Long, oak-rust. Calif.

C. coleosporioides (Diet. and Holw.) Arth., rust. Calif.

Fomes pinicola Fr., brown crumbly rot. General within range of host.

Razoumofskya americana (Nutt.) O. Kuntze, mistletoe. Oreg.

R. campylopoda (Engelm.) Piper, mistletoe. Pacific coast.

P. banksiana, jack pine.

Coleosporium helianthi (Schw.) Arth., rust. Mich.

Corticium vagum Berk. and Curt., damping-off. Nebr.

Cronartium cerebrum (Pk.) Hedge. and Long, oak-rust. Conn., Mich., Minn.

C. comptoniae Arth., rust. Conn., Wis., Minn.

C. pyriforme (Pk.) Hedge. and Long, rust. Minn.

Lophodermium amplum Davis, needle cast. Wis.

L. pinastri (Schrad.) Chev., needle cast. Wis., Minn.

Polyporus schweinitzii Fr., red-brown butt-rot. Minn.

Pythium debaryanum Hesse, damping-off.

Razoumofskya americana Nutt., mistletoe.

P. caribaea, slash pine.

Coleosporium apocynaceum Cke., rust. Fla.

C. carneum (Bosc) Jack., rust. Ga., Fla.

C. delicatulum (Arth. and Kern) Hedge. and Long, rust. Fla., La.

C. elephantopodis (Schw.) Thuem., rust. Fla.

C. ipomoeae (Schw.) Burr., rust. Fla.

Cronartium strobilinum (Arth.) Hedge. and G. Hahn, rust. Fla.

P. contorta, shore pine, and *P. murrayana*, lodgepole pine.

Cenangium piniphilum Weir, canker. Idaho.

Coleosporium solidaginis (Schw.) Thuem., rust. Colo., Mont., Idaho, Oreg., Wash.

Cronartium coleosporioides (Diet. and Holw.) Arth., rust. Colo., S. Dak., Mont., Idaho, Wyo., Wash., Calif.

C. cerebrum (Pk.) Hedge. and Long, oak-rust. Wyo., Utah, Idaho.

C. comptoniae Arth., rust. Mich.

C. filamentosum (Pk.) Hedge., pine-gall rust. Pacific Northwest.

C. harknessii (Moore) E. P. Meinecke, western pine-gall rust. Pacific coast; Idaho, Mont.

C. pyriforme (Pk.) Hedge. and Long, rust. Mich., Colo., Mont., Wyo., Idaho.

PINUS—Continued.

- P. contorta*, shore pine, and *P. murrayana*, lodgepole pine—Continued.
- Fomes pinicola* Fr., brown crumbly rot. Mont., Idaho.
F. roseus (Alb. and Schw.) Fr., brown pocket rot. General in range of host.
Hypoderma deformans Weir, needle cast, witches'-broom. Oreg., Calif.
H. lineare (Pk.) Thuem., needle cast. Colo.
Hypodermella montivaga (Petr.) Dearn., needle cast. Idaho, Oreg.
Lophodermium pinastri (Schrad.) Chev., needle cast. Colo., Alaska.
Neopeckia coulteri (Pk.) Sacc., brown felt-blight. Colo., Utah, Idaho, Wash., Oreg.
Peridermium betheli Hedge. and Long, rust. Colo.
Polyporus schweinitzii Fr., red-brown butt-rot. Idaho.
P. sulphureus (Bull.) Fr., brown-checked wood-rot.
Razoumofskyia americana Nutt., mistletoe. Rocky Mt. region; Pacific Northwest; eastern Calif.
Rhizina inflata (Schaeff.) Sacc., seedling blight. Mont.
Trametes pini (Brot.) Fr. (*Fomes pini* (Thore) Karst.), honeycomb rot. Mont., Idaho.
- P. echinata*, shortleaf pine.
- Coleosporium carneum* (Bosc) Jack., rust. Southeastern States.
C. delicatulum (Arth. and Kern) Hedge. and Long, rust. Pa., Md., S. C., Ga.
C. elephantopodis (Schw.) Thuem., rust. Fla.
C. helianthi (Schw.) Arth., rust. Ga.
C. inconspicuum (Long) Hedge. and Long, rust. Md., N. C., Ga.
C. ipomoeae (Schw.) Burr., rust. Pa., Va., N. C., S. C., Tenn., Ga., Ala., Ark., Tex.
C. solidaginis (Schw.) Thuem., rust. Del., Miss.
C. terebinthinaceae (Schw.) Arth., rust. Southeastern States.
Cronartium cerebrum (Pk.) Hedge. and Long, oak-rust. Ark.
C. comptoniae Arth., sweet-fern rust. N. C.
C. strobilinum Arth., rust. Miss.
Fomes pinicola Fr., brown crumbly rot. General in host range.
Lophodermium pinastri (Schrad.) Chev., needle cast. Ala.
Polyporus schweinitzii Fr., red-brown butt-rot.
Trametes pini (Brot.) Fr. (*Fomes pini* (Thore) Karst.), honeycomb rot. Mo.
- P. edulis*, nut pine.
- Coleosporium ribicola* (Cke. and Ell.) Arth., rust. Colo., N. Mex.
Cronartium occidentale Hedge., Bethel, and Hunt, piñon blister rust. Colo., N. Mex., Utah.
Fomes pinicola Fr., brown crumbly rot. General within host range.
Polyporus schweinitzii Fr., red-brown butt-rot.
Razoumofskyia divaricata (Engelm.) Coville, mistletoe. Colo., Utah, Calif.
Trametes pini (Brot.) Fr. (*Fomes pini* (Thore) Karst.), honeycomb rot.
- P. jeffreyi*, Jeffrey pine.
- Cronartium comptoniae* Arth., sweet-fern rust.
C. filamentosum (Pk.) Hedge. and Long, rust. Oreg.
C. harknessii (Moore) E. P. Meinecke, rust. Nev., Calif.
Fomes pinicola Fr., brown crumbly rot. General with host.
Polyporus schweinitzii Fr., red-brown butt-rot.
P. sulphureus (Bull.) Fr., brown-checked wood-rot.
Razoumofskyia americana Nutt., mistletoe. Calif.
R. campylopoda (Engelm.) Piper, mistletoe. Calif.
- P. lambertiana*, sugar pine.
- Armillaria mellea* (Vahl) Quel., root-rot. Calif.
Cronartium ribicola Fisch., blister rust. N. Y.
Fomes officinalis Fr., reddish brown-rot. Calif.
F. pinicola Fr., brown crumbly rot. Calif.
Lophodermium pinastri (Schrad.) Chev., needle cast. Oreg.
Polyporus schweinitzii Fr., red-brown butt-rot.
Razoumofskyia cyanocarpa (A. Nelson) P. A. Rydberg, mistletoe. Oreg., Calif.
Trametes pini (Brot.) Fr. (*Fomes pini* (Thore) Karst.), honeycomb rot. Calif.

PINUS—Continued.

P. monophylla, singleleaf pine.

- Cronartium occidentale* Hedge., Bethel, and Hunt, blister rust. Ariz., Calif.
Fomes pinicola Fr., brown crumbly rot. General within host range.
Polyporus schweinitzii Fr., red-brown butt-rot.
Razoumofskyia divaricata (Engelm.) Coville, mistletoe. Ariz., Calif.

P. montana, Swiss mountain pine.

- Cronartium comptoniae* Arth., sweet-fern rust. N. H., Conn.
Herpotrichia nigra Hartig, matting.

P. monticola, western white pine.

- Cronartium ribicola* Fisch., blister rust. Wash.
Dasyscypha fuscousanguinea Rehm, canker. Mont., Idaho, Wash.
Fomes officinalis Fr., reddish brown-rot. Idaho.
F. pinicola Fr., brown crumbly rot.
Hypoderma lineare (Pk.) Thuem., needle cast. Pacific Northwest.
Lophodermium pinastri (Schr.) Chev., needle cast. Wash., Idaho, Mont.
Neopectekia coulteri (Pk.) Sacc., brown felt-blight. Calif.
Polyporus schweinitzii Fr., red-brown butt-rot.
P. sulphureus (Bull.) Fr., brown-checked wood-rot.
Razoumofskyia cyanocarpa (A. Nelson) P. A. Rydberg, mistletoe. Calif.
Rhizina inflata (Schaeff.) Sacc., seedling blight. Mont., Idaho.
Scleroderris bacillifera (Karst.) Sacc., branch canker. Wash., Oreg.
Sparassis radicata Weir, yellow root-rot. Mont., Pacific Northwest.
Trametes pini (Brot.) Fr. (*Fomes pini* (Thore) Karst.), honeycomb rot. Idaho.

P. nigra, Austrian pine and Corsican pine.

- Coleosporium carneum* (Bosc) Jack., rust. Ohio.
C. delicatulum (Arth. and Kern) Hedge. and Long, rust. Pa.
C. solidaginis (Schw.) Thuem., rust. Pa.
Corticium vagum Berk. and Curt., damping-off.
Cronartium comptoniae Arth., sweet-fern rust. Conn., Ohio.
C. pyriforme (Pk.) Hedge. and Long, rust. Conn.
Peridermium sp., leaf-rust. Ohio, Nebr.
Pythium debaryanum Hesse, damping-off.

P. palustris, longleaf pine.

- Coleosporium apocynaceum* Cke., rust. Fla.
C. carneum (Bosc) Jack., rust. S. C. to Miss.
C. delicatulum (Arth. and Kern) Hedge. and Long, rust. S. C., Ga., Fla., Miss.
C. elephantopodis (Schw.) Thuem., rust. N. C., S. C., Fla., Ala., Miss.
C. inconspicuum (Long) Hedge. and Long, rust. S. C.
C. ipomoeae (Schw.) Burr., rust. S. C., Fla., Miss.
C. laciniariae Arth., rust. Ga., Fla.
C. terebinthinaceae (Schw.) Thuem., rust. S. C.
Cronartium cerebrum (Pk.) Hedge. and Long, oak-rust. Ga.
C. fusiforme (Pk.) Hedge. and Hunt, rust. Tex.
C. strobilinum Arth., pine-cone rust. Fla.
Fomes pinicola Fr., brown crumbly rot.
Peridermium floridanum Hedge. and G. Hahn, rust. Fla.
Polyporus schweinitzii Fr., red-brown butt-rot.
Septoria acicola (Thuem.) Sacc., leaf-spot. La.
Trametes pini (Brot.) Fr. (*Fomes pini* (Thore) Karst.), honeycomb rot.

P. ponderosa, western yellow pine.

- Botrytis cinerea* Auct., gray-mold. Utah.
Cenangium abietis (Pers.) Rehm, twig-blight. N. Mex., Ariz., Mont., Idaho, Wash., Oreg.
C. piniphilum Weir, canker. Mont., Idaho, Wash.
Ceratostomella pilifera (Fr.) Wint., bluing. S. Dak.
Coleosporium carneum (Bosc) Jack., rust. D. C., Ohio.
C. delicatulum Arth. and Kern, rust. D. C.
C. solidaginis (Schw.) Thuem., rust. Md.
Corticium vagum Berk. and Curt., damping-off. Nebr.
Cronartium cerebrum (Pk.) Hedge. and Long, oak-rust. Pa., Wis., Nebr., Idaho.

PINUS—Continued.

P. ponderosa, western yellow pine—Continued.

- C. comptoniae* Arth., sweet-fern rust. Mass., N. H., Conn., Mich.
C. filamentosum (Pk.) Hedge. and Long, rust. Colo., Mont., Ariz., Utah, Wash., Calif.
C. harknessii (Moore) E. P. Meinecke, rust. Idaho, Wash., Calif.
C. pyriforme (Pk.) Hedge. and Long, rust. Mont., Wyo., Colo., S. Dak., Ariz., Utah, Idaho; Pacific coast.
C. stalactiforme Arth., rust. Mont.
Fomes officinalis Fr., reddish brown-rot. S. Dak., Ariz., Wash.
F. pinicola Fr., brown crumbly rot. Western States.
F. roseus (Alb. and Schw.) Fr., brown pocket rot. General in host range.
Fusarium sp., damping-off. Vt., N. Y., N. J., Nebr.
Hypoderma deformans Weir, needle cast. Pacific Northwest and Mont.
Lentinus sp., red-brown heart-rot. Ariz.
Lophodermium pinastri (Schrad.) Chev., needle cast. Idaho, Oreg.
Neopeckia coulteri (Pk.) Sacc., brown felt-blight. Calif.
Pestalozzia sp., leaf-blight. N. Y., Nebr.
Polyporus ellisianus (Murr.) Long, red-rot. S. Dak., N. Mex., Ariz., Wash.
P. ponderosus Schrenk, red-rot. S. Dak.
P. schweinitzii Fr., red-brown butt-rot. Mont.
P. sulphureus (Bull.) Fr., brown-checked wood-rot.
Pythium debaryanum Hesse, damping-off.
Razoumofskyia americana Nutt., mistletoe. Mont., Idaho, Oreg.
R. campylopoda (Engelm.) Piper, mistletoe. Northern Rocky Mt. States; Pacific Northwest.
R. cryptopoda (Engelm.) Coville, mistletoe. Rocky Mt. States.
Rhizina inflata (Schaeff.) Sacc., seedling blight. Mont.
Trametes pini (Brot.) Fr. (*Fomes pini* (Thore) Karst.), honeycomb rot. S. Dak., Mont., Oreg., Calif.
- P. pungens*, Table Mountain pine.
Coleosporium solidaginis (Schw.) Thuem., rust. Md.
Cronartium pyriforme (Pk.) Hedge. and Long, rust. Pa., Northwestern States.
- P. radiata*, Monterey pine.
Cronartium cerebrum (Pk.) Hedge. and Long, rust. Calif.
Lophodermium pinastri (Schrad.) Chev., needle cast. Calif.
Razoumofskyia campylopoda (Engelm.) Piper, mistletoe. Calif.
- P. resinosa*, red pine.
Coleosporium delicatulum (Arth. and Kern) Hedge. and Long, rust. Vt.
C. solidaginis (Schw.) Thuem., needle rust. N. H., Vt., N. Y., Pa., S. C., Minn.
Corticium vagum Berk. and Curt., damping-off. Conn., Mich., Minn.
Cronartium comptoniae Arth., sweet-fern rust. N. H.
Fomes pinicola Fr., brown crumbly rot. General within range of host.
Fusoma parasiticum Tub., damping-off. Minn.
Polyporus schweinitzii Fr., red-brown butt-rot.
P. sulphureus Fr., brown-checked wood-rot. Minn.
Pythium debaryanum Hesse, damping-off. Minn.
Trametes pini (Brot.) Fr. (*Fomes pini* (Thore) Karst.), honeycomb rot.
- P. rigida*, pitch pine.
Armillaria mellea (Vahl) Quel., root-rot. Pa.
Coleosporium campanulae (Pers.) Lév., rust. Ohio.
C. carneum (Bosc) Jack., rust. Conn., Pa., D. C., Va., N. C., W. Va., Ohio, Ind.
C. delicatulum (Arth. and Kern) Hedge. and Long, rust. New England, south to N. C.
C. elephantopodis (Schw.) Thuem., rust. D. C., N. C.
C. ipomoeae (Schw.) Burr., rust. Pa., Md., S. C., Ga.
C. laciniariae Arth., rust. N. J.
C. solidaginis (Schw.) Thuem., rust. Conn. to Md.
C. terebinthinaceae (Schw.) Arth., rust. N. C.
Cronartium cerebrum (Pk.) Hedge. and Long, oak-rust. Mass., N. Y., N. J., Pa.

PINUS—Continued.

P. rigida, pitch pine—Continued.

C. comptoniae Arth., sweet-fern rust. New England, N. Y., Pa.

C. pyriforme (Pk.) Hedgec. and Long, rust. Vt., Conn., N. J., North-western States.

Fomes pinicola Fr., brown crumbly rot. General within range of host.

Hypoderma brachysporum (Rostr.) Tub., needle cast. Mass.

Lophodermium pinastri (Schr.) Chev., needle cast. R. I., N. J.

Pestalozzia funerea Desm., leaf-blight. Mass.

Polyporus schweinitzii Fr., red-brown butt-rot.

Trametes pini (Brot.) Fr. (*Fomes pini* (Thore) Karst.), honeycomb rot. Me., N. J., Ala., Ky.

P. sabiniana, digger pine.

Cronartium cerebrum (Pk.) Hedgec. and Long, oak-rust. Calif.

C. harknessii (Moore) E. P. Meinecke, rust. Calif.

Razoumofskya campylopoda (Engelm.) Piper, mistletoe. Calif.

P. serotina, pond pine.

Coleosporium carneum (Bosc) Jack., rust. S. C., Fla., Ga.

C. delicatulum (Arth. and Kern) Hedgec. and Long, rust. N. J., S. C., Ga., Fla.

C. elephantopodis (Schw.) Thuem., rust. Fla.

C. ipomoeae (Schw.) Burr., rust. S. C.

C. solidaginis (Schw.) Thuem., rust. N. C., S. C.

C. terebinthinaceae (Schw.) Arth., rust. S. C.

P. strobus, white pine.

Armillaria mellea (Vahl) Quel., root-rot. Pa.

Cenangium abietis (Pers.) Rehm, canker. Ohio.

Coccomyces pini (Alb. and Schw.) Karst., bark-blight. Ga.

Corticium vagum Berk. and Curt., damping-off. Conn., Mass., N. Y., Minn.

Cronartium cerebrum (Pk.) Hedgec. and Long, oak-rust. Ga.

C. ribicola Fisch., blister rust. Me. to Minn., south to N. J. and Pa.

Cytospora sp. Pa.

Fomes roseus (Alb. and Schw.) Fr., brown pocket rot. General in host range.

Fusarium sp., damping-off. Vt., N. Y., Iowa.

Fusoma parasiticum Tub., damping-off. Minn.

Hendersonia foliicola (Berk.) Fckl., leaf-spot. Mass.

Hypoderma lineare (Pk.) Thuem., needle cast. N. Y., Pa.

H. strobicola Tub., needle cast. New England, Pa., N. C.

Lophodermium pinastri (Schr.) Chev., needle cast. New England, Pa., Wis.

Nectria cucurbitula Fr., canker. Vt., Pa.

Pestalozzia sp., leaf-blight. Vt., Mass., N. Y.

Phoma harknessii Sacc., canker. Conn., Mass., N. Y.

Polyporus berkeleyi Fr., string and ray rot. Minn.

P. ellisianus (Murr.) Long, red-rot. Vt.

P. schweinitzii Fr., red-brown butt-rot. Me.

Trametes pini (Brot.) Fr. (*Fomes pini* (Thore) Karst.), honeycomb rot. N. H., Pa., N. C., Minn.

P. sylvestris, Scotch pine.

Coleosporium sonchi-arvensis (Pers.) Lév., rust. Wis.

Corticium vagum Berk. and Curt., damping-off. Conn.

Cronartium cerebrum (Pk.) Hedgec. and Long, oak-rust. Pa.

C. comptoniae Arth., rust. N. H., Mass., N. Y., Ohio.

C. pyriforme (Pk.) Hedgec. and Long, rust. Conn.

Cytospora pinastri Fr., needle blight. Pa.

Fusoma parasiticum Tub., damping-off. Minn.

Pestalozzia sp., leaf-blight. Vt., Nebr.

Phytophthora cactorum (Leb. and Cohn) Schroet., damping-off. Minn.

Trametes pini (Brot.) Fr. (*Fomes pini* (Thore) Karst.), honeycomb rot. N. J.

PINUS—Continued.

P. taeda, loblolly pine.

- Coleosporium apocynaceum* Cke., rust. Fla.
C. carneum (Bose) Jack., rust. Southeastern States, N. J., Ark.
C. delicatulum (Arth. and Kern) Hedge. and Long, rust. Va., N. C., S. C., Fla., Tex.
C. elephantopidis (Schw.) Thuem., rust. South Atlantic and Gulf States.
C. ipomoeae (Schw.) Burr., rust. Southeastern States.
C. laciniariae Arth., rust. Fla.
C. pini Gall., rust. Md.
C. solidaginis (Schw.) Thuem., rust. Southeastern States.
C. terebinthinaceae (Schw.) Arth., rust. S. C., Ala.
Cronartium cerebrum (Pk.) Hedge. and Long, oak-rust. Fla., Ala., Miss., La.
C. comptoniae Arth., sweet-fern rust. N. J., Ga.
C. pyriforme (Pk.) Hedge. and Long, rust. N. J.
Fomes annosus Fr., white spongy rot. New England.
F. pinicola Fr., brown crumbly rot.
Lophodermium pinastri (Schrad.) Chev., needle cast. La.
Peridermium minutum Hedge. and Hunt, rust. Fla.
Polyporus schweinitzii Fr., red-brown butt-rot.
Septoria acicola (Thuem.) Sacc., leaf-spot. Fla.
Trametes pini (Brot.) Fr. (*Fomes pini* (Thore) Karst.), honeycomb rot.

P. virginiana, scrub pine.

- Coleosporium helianthi* (Schw.) Arth., rust. Pa. to Ga.
C. inconspicuum (Long) Hedge. and Long, rust. Md. to Ga.
C. pini Gall., rust. Middle Atlantic States, Tenn.
Cronartium cerebrum (Pk.) Hedge. and Long, oak-rust. Pa. to Ala.
C. comptoniae Arth., sweet-fern rust. Md.
Fomes pinicola Fr., brown crumbly rot.
F. roseus (Alb. and Schw.) Fr., brown pocket rot.
Lophodermium pinastri (Schrad.) Chev., needle cast. Md.
Polyporus schweinitzii Fr., red-brown butt-rot.
Trametes pini (Brot.) Fr. (*Fomes pini* (Thore) Karst.), honeycomb rot. Md., Ga.

PISUM.

P. sativum, pea.

- Aphanomyces euteiches* Drechs., root-rot. Conn., N. Y., Pa., N. J., Del., Md., Ohio, Ind., Ill., Mich., Wis., Mont., Utah, Idaho, Calif.
Bacillus lathyri Manns and Taub., bacterial streak. Del.
Bacterium pisi (W. G. Sackett) EFS. (*Phytomonas pisi* (Sack.) Com. S. A. B.), bacterial blight. N. Y., Pa., Del., Md., S. C., Fla., Ill., Ind., Mich., Wis., N. Dak., Colo., Mont., Oreg.
Colletotrichum pisi Pat., anthracnose. Wis.
Corticium vagum Berk. and Curt., stem-rot. Widespread.
Erysiphe polygoni DC., powdery mildew. General.
Fusarium martii minus Sherb., stem-rot. Widespread.
F. martii pisi F. R. Jones, root-rot. Widespread.
Heterodera radicola (Greef) Muell., root-rot. Southern States, Calif.
Isariopsis griseola Sacc., leaf-spot. R. I.
Mycosphaerella pinodes (Berk. and Blox.) R. E. Stone (*Ascochyta pisi* Lib.), blight. General.
Ozonium omnivorum Shear (*Phymatotrichum omnivorum* (Shear) Dug.), root-rot. Tex.
Peronospora viciae (Berk.) D By., downy mildew. N. Y., Pa., Del., Md., Tenn., Wis., Iowa, Kans., Oreg., Calif.
Phytophthora cactorum (Leb. and Cohn) Schroet., blight. Conn.
Pythium spp., root-rot. Conn., Del., Ill., Mich., Wis., Mont.
Sclerotinia sclerotiorum (Lib.) Mass., stem-rot. Pa., Del., Fla.
Septoria flagellifera Ell. and Ev., leaf-spot. Wis., S. Dak.
S. pisi West., leaf-spot. North of Ohio and Missouri Rivers; Tex., Mont., Colo., Calif.
Thielavia basicola (Berk. and Br.) Zopf, black root-rot. Conn., N. Y., Pa., Md., Ark.
Uromyces fabae (Pers.) D By., rust. Minn., N. Dak., Nebr.

PLATANUS.

Platanus sp., *sycamore, planetree.

Armillaria mellea (Vahl) Quel., root-rot. Md., W. Va.

Cercospora platanicola Ell. and Ev., leaf-spot. Ga., La.

Gnomonia veneta (Sacc. and Speg.) Kleb., anthracnose. General.

Microsphaera alni (Wallr.) Wint., powdery mildew. East of Great Plains.

Pheospora multumaculans Heald and Wolf, leaf-blight. Tex.

Phoradendron flavescens (Pursh) Nutt., mistletoe. Calif.

Phyllosticta platani Sacc. and Speg., leaf-spot. Ala., Kans.

Septoria platanifolia Cke., leaf-spot. Md., S. C.

Stigmia platani (Fckl.) Sacc., leaf-spot. W. Va., Ga., Miss., Okla., Ark., Ind., Ill., Mo., Calif.

POA.

P. compressa, Canada bluegrass.

Erysiphe graminis DC., powdery mildew. Minn.

Ophiobolus graminis Sacc., take-all. N. Y.

Puccinia coronata Cda., crown-rust. Mo., Kans.

P. epiphylla Wetts., rust. Minn., Colo.

P. graminis Pers., stem-rust. Pa., Ind., Mich.

Scolecotrichum graminis Fckl., leaf-spot. Wis., Minn., Nebr.

P. pratensis, Kentucky bluegrass.

Claviceps microcephala (Wallr.) Karst., ergot. Ind.

C. purpurea (Fr.) Tul., ergot. Ky., Ill., Minn.

Colletotrichum graminicolum (Ces.) Wils., anthracnose. Ohio, Ind., Minn.

Corticium vagum Berk. and Curt., brown-patch. General.

Entyloma irregulare Johans., smut. Ill., Minn.

Epichloe typhina (Pers.) Tul. Del.

Erysiphe graminis DC., powdery mildew. General, especially east of Great Plains.

Helminthosporium vagans Drechs., leaf-spot. New England, N. Y., Pa., Md., Ill., Wis.

Phyllachora graminis (Pers.) Fckl., tar-spot. Nebr.

Puccinia glumarum (Schm.) Eriks. and Henn., stripe-rust. Idaho.

P. epiphylla Wetts., rust. General.

P. triticina Eriks., leaf-rust. Colo.

Sclerotium sp., damping-off.

Scolecotrichum graminis Fckl. Pa., Ind., Minn.

Septoria sp., leaf-blotch. Pa., Ind., Wis., Minn.

Uromyces poae Rabh., rust. Ind.

Ustilago striaeformis (West.) Niessl, stripe-smut. General.

POINCIANA.

P. regia, royal poinciana.

Gloeosporium sp., anthracnose. Fla.

POPULUS.

Populus spp., poplar, cottonwood, aspen.

Bacterium tumefaciens EFS. and Town. (*Phytoplasma tumefaciens* (EFS. and Town.) Com. S. A. B.), crown-gall. Conn., N. J., Minn., Kans., Wyo., Utah.

Cercospora populina Ell. and Ev., leaf-spot. Ala., La.

Cladosporium subsessile Ell. and Barth., leaf-spot. Wis.

Cytospora chrysosperma (Pers.) Fr., canker. General.

Dimerosporium populi Ell. and Ev., sooty mold. Mont.

Dothichiza populea Sacc. and H. Briard, canker. General east of Great Plains.

Fomes applanatus (Pers.) Wallr. (*Ganoderma applanatum* (Pers.) Pat.), white-streaked rot. Conn., Minn., N. Dak., S. Dak., N. Mex.

F. everhartii (Ell. and Gall.) Schrenk, white-rot. Mont.

F. fomentarius (L.) Fr., white sapwood rot. Minn.

F. ignarius (L.) Fr., white heart-rot. General.

Hypoxyton pruinatum (Klotzsch) Cke., canker. Me., N. Y., Mich.

Marssonina brunnea (Ell. and Ev.) Sacc., anthracnose. N. J., Wis., Wash.

M. curvata Bub. and Kab., leaf-spot. Utah.

M. populi (Lib.) Magn., leaf-spot. Wis.

POPULUS—Continued.

Populus spp., poplar, cottonwood, aspen—Continued.

- M. rhabdospora* (Ell. and Ev.) Magn., leaf-spot. N. J., Wis.
Melampsora abietis-canadensis (Farl.) F. Ludwig, rust. General.
M. albertensis Arth., rust. Western States.
M. larici-populina Kleb., rust. General.
M. medusae Thuem., rust. General.
M. occidentalis Jack., rust. Western States; Wis.
Napicladium tremulae (Frank) Sacc., twig-blight. Minn.
Ozonium omnivorum Shear (*Phymatotrichum omnivorum* (Shear) Dug.), root-rot. Tex.
Phoradendron flavescens (Pursh) Nutt., mistletoe. Southwest.
P. flavescens macrophyllum Engelm., mistletoe. N. Mex., Ariz.
Phyllosticta alcides Sacc., leaf-spot. Ohio, Idaho.
P. brunnea Dearn. and Barth., leaf-spot. Mont., Colo., Ariz.
P. intermixta Seaver, leaf-spot. Kans.
P. maculans Ell. and Ev., leaf-spot. N. Y., Kans.
Polyporus dryadeus (Pers.) Fr., white root-rot.
P. dryophilus Berk., white pocket heartwood rot. Me., N. H., Wis., Colo.
Rhytisma nervale (Alb. and Schw.) Rehm, tar-spot. N. Y.
Sclerotium bifrons Ell. and Ev., leaf-spot. New England and Adirondack region; Wis., Wyo., Colo., Utah, Oreg.
Septoria musiva Pk., leaf-spot. Widespread.
S. populicola Pk., leaf-spot. Nebr., Tex.
Stereum purpureum Fr., silver-leaf. Wash.
Taphrina aurea (Pers.) Fr., yellow leaf blister. Me., Mass., N. Y., N. J., Iowa; Pacific coast.
Trochila popularum Desm., leaf-spot. Widespread.
Uncinula salicis (DC.) Wint., powdery mildew. General.
Venturia tremulae Aderh., scab. Me., Wash.

PRIMULA.

Primula sp., primrose.

- Botrytis cinerea* Auct., gray-mold. Conn., S. C., Ohio.
Heterodera radicolica (Greef) Muell., root-knot. Conn., W. Va.
Ramularia primulae Thuem., leaf-spot. Conn., N. Y., Del.
 Mosaic, undet. Pa. (greenhouse).

PROSOPIS.

Prosopis sp., prairie mesquite.

- Cercospora prosopidis* Heald and Wolf, leaf-blight. Tex.
Erysiphe sp., powdery mildew. Tex.
Gloeosporium leguminum Cke., pod-spot, anthracnose. Tex.
Neoravenelia holwayi (Diet.) Long, rust. Tex., Calif.
Phoradendron californicum Nutt., mistletoe. Tex., Ariz., Calif.
P. flavescens (Pursh) Nutt., mistletoe. Tex.
P. flavescens macrophyllum Engelm., mistletoe. Ariz., N. Mex.
Phyllosticta juliflora Ell. and Barth., leaf-spot. Tex.
Ravenelia arizonica Ell. and Ev., rust. Tex., Ariz., Calif.

PRUNUS.

Prunus sp., cherries (sweet and sour).

- Armillaria mellea* (Vahl) Quel., root-rot. Ohio, Mich., Ark., Pacific coast.
Bacillus amylovorus (Burr.) Trev. (*Erwinia amylovora* (Burr.) Com. S. A. B.), blight. Ohio, Mich., Kans., N. Mex., Wash.
Bacterium cerasi F. L. Griffin, bacterial gummosis. Okla., Ind., Mich., Idaho; Pacific coast.
B. pruni EFS. (*Phytomonas pruni* (EFS.) Com. S. A. B.), bacterial spot. N. Y., Ala., Okla., Ill.
B. tumefaciens EFS. and Town. (*Phytomonas tumefaciens* (EFS. and Town.) Com. S. A. B.), crown-gall. Mass., N. Y., Okla., Ohio, N. Mex., Colo.; Pacific Northwest.
Cercospora cerasella Sacc., leaf-spot. Ga., Fla., Ala., Miss.
C. circumscissa Sacc., shot-hole. Widespread.
C. rosicola Pass., leaf-spot. Oreg.

PRUNUS—Continued.

Prunus sp., cherries (sweet and sour)—Continued.

- Cladosporium carpophilum* Thuem., scab. Me., N. H., N. Y., Mich., Iowa, Oreg.
- Clitocybe parasitica* E. M. Wilcox, root-rot. Ark.
- Coccomyces hiemalis* Hig., leaf-spot. General.
- Coryneum beijerinckii* Oud., blight. Pacific coast, Idaho, Utah.
- Exoascus cerasi* (Fekl.) Sadeb., witches'-broom. North Atlantic Coast States; Tenn., Pacific coast.
- E. pruni* Fekl., pockets. Minn.
- Fomes applanatus* (Pers.) Wallr. (*Ganoderma applanatum* (Pers.) Pat.), white-streaked rot. N. Y.
- Phyllosticta prunicola* Sacc., leaf-spot. Wis., Minn.
- Plowrightia morbosa* (Schw.) Sacc., black-knot. East of Great Plains.
- Podosphaera oxyacanthae* (Fr.) D By., powdery mildew. General.
- Polyporus sulphureus* (Bull.) Fr., brown-checked wood-rot.
- Schizophyllum commune* Fr., sap-rot. Ohio, Minn., Nebr.
- Sclerotinia fructicola* (Wint.) Rehm (*S. americana* (Wormald) Norton and Ezekiel), brown-rot. General.
- Stereum purpureum* Fr., associated with silver-leaf. N. Y., Minn., Oreg.
- Tranzschelia punctata* (Pers.) Arth., rust. Miss., Mich., Nebr., Calif.
- Valsa leucostoma* (Pers.) Fr., die-back. Ohio, Mo.
- Venturia cerasi* Aderh., scab. Ind.
- P. avium*, sweet cherry.
- Alternaria* sp., fruit-rot. Mich., Idaho.
- A. citri cerasi* B. A. Rudolph, leaf-spot. Calif.
- Armillaria mellea* (Vahl) Quel., root-rot. Pacific coast.
- Bacillus amylovorus* (Burr.) Trev. (*Erwinia amylovora* (Burr.) Com. S. A. B.), blight. Wash.
- Bacterium cerasi* F. L. Griffin, bacterial gummosis. Oreg., Calif.
- B. pruni* EFS. (*Phytomonas pruni* (EFS.) Com. S. A. B.), bacterial spot. N. Y., Mich.
- Cercospora cerasella* Sacc., leaf-spot. Ga., Ala.
- C. circumscissa* Sacc., shot-hole. N. J., Pa., Ohio.
- Coccomyces hiemalis* Hig., leaf-spot. N. Y., Pa., Md., Wash., Oreg.
- Coryneum beijerinckii* Oud., blight. Pacific Northwest.
- Exoascus cerasi* (Fekl.) Sadeb., witches'-broom. N. Y., Wash., Oreg., Alaska.
- E. communis* Sadeb., pockets. Iowa.
- E. pruni* Fekl., pockets. Okla.
- Physalospora malorum* (Pk.) Shear (*P. cydoniae* Am. Auct.) black-rot. East of Rocky Mts.
- Plowrightia morbosa* (Schw.) Sacc., black-knot. N. Y., Mich.
- Podosphaera oxyacanthae* (DC.) D By., powdery mildew. N. Y., Md., Iowa, Wash.
- Polyporus lacteus* Fr., heart-rot. Oreg.
- Sclerotinia cinerea* (Bon.) Schroet. (*Monilia oregonensis* Barss and Posey), blossom blight. Pacific coast.
- S. fructicola* (Wint.) Rehm (*S. americana* (Wormald) Norton and Ezekiel), brown-rot. General.
- Tranzschelia punctata* (Pers.) Arth., rust. Okla.
- P. cerasus*, sour cherry.
- Alternaria* sp., fruit-rot. Mich.
- Bacterium pruni* EFS. (*Phytomonas pruni* (EFS.) Com. S. A. B.), bacterial spot. N. Y.
- Cercospora cerasella* Sacc., leaf-spot. Ala.
- Coccomyces hiemalis* Hig., leaf-spot. General east of Great Plains and north of Ky. and Va.
- Exoascus cerasi* (Fekl.) Sadeb., witches'-broom. Md., Wis.
- E. communis* Sadeb., pockets. Iowa.
- Phyllosticta prunicola* Sacc., leaf-spot.
- Podosphaera oxyacanthae* (DC.) D By., powdery mildew. General.
- Plowrightia morbosa* (Schw.) Sacc., black-knot. N. Y., Pa., Md., Va., W. Va., N. C.
- Sclerotinia fructicola* (Wint.) Rehm (*S. americana* (Wormald) Norton and Ezekiel), brown-rot. N. J., Ind.

PRUNUS—Continued.

- P. besseyi*, *P. cuneata*, *P. pumila*, sand cherry.
Bacterium tumefaciens EFS. and Town. (*Phytomonas tumefaciens* (EFS. and Town.) Com. S. A. B.), crown-gall. Minn.
Exoascus communis Sadeb., pockets. N. Y., Wis., N. Dak., S. Dak., Kans.
Plowrightia morbosa (Schw.) Sacc., black-knot. N. Dak.
Podosphaera oxyacanthae (DC.) D By., powdery mildew. Iowa, N. Dak., S. Dak., Nebr.
Sclerotinia cinerea (Bon.) Schroet. (*Monilia oregonensis* Barsz and Posey), blossom blight. Wash., Ore.
S. fructicola (Wint.) Rehm (*S. americana* (Wormald) Norton and Ezekiel), brown-rot. Minn., Nebr.
Tranzschelia punctata (Pers.) Arth., rust. Nebr., Kans.
- P. pennsylvanica*, pin cherry.
Coccomyces hiemalis Hig., leaf-spot. N. Y., W. Va.
Exoascus cerasi (Fckl.) Sadeb., witches'-broom. N. H.
Phyllosticta congesta Heald and Wolf, leaf-spot, Wis.
Physalospora malorum (Pk.) Shear (*P. cydoniae* Am. Auct.), black-rot.
Plowrightia morbosa (Schw.) Sacc., black-knot. Me., W. Va., Minn.
Podosphaera oxyacanthae (DC.) D By., powdery mildew. Ill.
Tranzschelia punctata (Pers.) Arth., rust. Ill.
- P. serotina*, wild black cherry.
Coccomyces hiemalis Hig., leaf-spot. Widespread east of Great Plains.
C. lutescens Hig., leaf-blight. N. Y., Pa., Ga., Miss., Ill.
Exoascus cerasi (Fckl.) Sadeb., witches'-broom. Mass., Ala.
E. farlowii Sadeb., leaf-curl. Ala.
E. pruni Fckl., pockets. Va., Ala.
E. varius Atk., leaf deformation. Del., Fla., Ala.
Fomes fomentarius (L.) Fr., white sapwood rot.
Gloeosporium serotinum Ell. and Ev., leaf-spot. Del.
Phoradendron flavescens (Pursh) Nutt., mistletoe. Ind.
Phyllosticta prunicola Sacc., leaf-spot. N. Y., Wis.
P. serotina Cke., leaf-spot. Widespread east of Great Plains.
P. virginiana (Ell. and Hals.) Seaver, leaf-spot. Iowa, Kans.
Plowrightia morbosa (Schw.) Sacc., black-knot. Widespread east of Miss. River.
Podosphaera oxyacanthae (DC.) D By., powdery mildew. N. Y., Ill.
Sclerotinia fructicola (Wint.) Rehm (*S. americana* (Wormald) Norton and Ezekiel), brown-rot. S. C.
S. seaveri Rehm. N. Y., Pa., Del., Md., Va., W. Va., Ga., Wis., Iowa.
Septoria cerasina Pk., leaf-spot. Mass.
S. ravenelii Thuem., leaf-spot. Pa., N. J., S. C., Ill.
Tranzschelia punctata (Pers.) Arth., rust. S. C., Ala., Tex., Ind., Ill., Iowa, Mo.
Valsa leucostoma (Pers.) Fr., die-back. N. Y.
- P. virginiana*, *P. demissa*, chokecherry.
Bacterium pruni EFS. (*Phytomonas pruni* (EFS.) Com. S. A. B.), bacterial spot. N. Y.
Cercospora cerasella Sacc., leaf-spot. Kans.
C. circumscissa Sacc., shot-hole. N. Dak., Kans.
Coccomyces hiemalis Hig., leaf-spot. Widespread in northern United States.
C. lutescens Hig., leaf-blight. N. Y., Wash.
Cylindrosporium tubeufianum Allesch., leaf-spot. N. Y.
Cytospora chrysosperma (Pers.) Fr., canker. Mont.
Exoascus cerasi (Fckl.) Sadeb., witches'-broom. Nebr., Colo.
E. confusus Atk., fruit deformation. Mass.
E. farlowii (Sadeb.) Sacc., leaf-curl. Wash.
E. pruni Fckl., pockets. N. Dak., Wash.
Gloeosporium prunicolum Ell. and Ev., leaf-spot. Wis.
Phyllactinia corylea (Pers.) Karst., powdery mildew. Wash.
Phyllosticta circumscissa Cke., leaf-spot. Kans., Wash.
P. prunicola Sacc., leaf-spot. N. Y.
P. virginiana (Ell. and Hals.) Seaver, leaf-spot. Wis., Iowa, Kans., Mont.
Physalospora malorum (Pk.) Shear (*P. cydoniae* Am. Auct.), black-rot.

PRUNUS—Continued.

P. virginiana, *P. demissa*, chokecherry—Continued.

Plourightia morbosa (Schw.) Sacc., black-knot. Widespread in Northern States.

Podosphaera oxycanthae (DC.) D By., powdery mildew. Widespread in Northern States.

Sclerotinia angustior Rehm. N. Y., Pa., Iowa, N. Dak.

S. demissa B. F. Dana, blight. Idaho, Wash.

S. fructicola (Wint.) Rehm (*S. americana* (Wormald) Norton and Ezekiel), brown-rot. Conn., Fla., Kans.

Septogloeum nuttallii Hark., leaf-spot. Oreg.

Tranzschelia punctata (Pers.) Arth., rust. S. C., Mich., Ill.

P. armeniaca, apricot.

Armillaria mellea (Vahl) Quel., root-rot. Calif.

Bacillus amylovorus (Burr.) Trev. (*Erwinia amylovora* (Burr.) Com. S. A. B.), blight. Pa., Tex., Nebr., Colo.

Bacterium cerasi F. L. Griffin, bacterial gummosis. Calif.

B. pruni EFS. (*Phytomonas pruni* (EFS.) Com. S. A. B.), bacterial spot. Ill., Nebr.

B. tumefaciens EFS. and Town. (*Phytomonas tumefaciens* (EFS. and Town.) Com. S. A. B.), crown-gall. Colo., Ariz., Idaho, Pacific coast.

Botrytis cinerea Auct., fruit-rot. Calif.

Cercospora circumscissa Sacc., shot-hole. Tex., Calif.

Cladosporium carpophilum Thuem., scab. Widespread.

Coccomyces sp., leaf-spot. Mass., Tex.

Coryneum beijerinckii Oud., blight. Utah, Idaho, Pacific coast.

Heterodera radicolica (Greef) Muell., root-knot. Ariz.

Monilia sp., blossom blight. Calif.

Monochaetia rosenwaldia A. Khazanoff, tumor. Calif.

Ozonium omnivorum Shear (*Phymatotrichum omnivorum* (Shear) Dug.), root-rot. Ariz.

Phyllosticta circumscissa Cke., shot-hole. Calif.

Plourightia morbosa (Schw.) Sacc., black-knot. N. Y., Colo.

Sclerotinia cinerea (Bon.) Schroet. (*Monilia oregonensis* Barss and Posey), blossom blight. Wash., Oreg.

S. fructicola (Wint.) Rehm (*S. americana* (Wormald) Norton and Ezekiel), brown-rot. Mass., Conn., N. Y., Md., Ohio, Ind., Ill., Tex., Okla., Colo., Pacific coast.

S. sclerotiorum (Lib.) Mass., green-rot. Calif.

Septoria cerasina Pk., leaf-spot. Calif.

Tranzschelia punctata (Pers.) Arth., rust. Miss., Tex., Calif.

Valsa leucostoma (Pers.) Fr., twig-blight. Tex.

Verticillium sp., wilt. Calif.

P. domestica (in part), prune.

Armillaria mellea (Vahl) Quel., root-rot. Pacific coast.

Bacillus amylovorus (Burr.) Trev. (*Erwinia amylovora* (Burr.) Com. S. A. B.), blight. Pacific Northwest.

Bacterium cerasi F. L. Griffin, bacterial gummosis. Pacific coast.

B. pruni EFS. (*Phytomonas pruni* (EFS.) Com. S. A. B.), bacterial spot. N. Y., Pa.

B. tumefaciens EFS. and Town. (*Phytomonas tumefaciens* (EFS. and Town.) Com. S. A. B.), crown-gall. Pacific Northwest; Calif.

Cercospora circumscissa Sacc., shot-hole. Wash.

Cladosporium carpophilum Thuem., scab. Ohio, Nebr., Pacific Northwest.

Coccomyces prunophorae Hig., leaf-spot. N. Y., Del., Nebr., Pacific coast.

Coryneum beijerinckii Oud., blight. Wash., Oreg.

Eoascus pruni (Berk.) Fekl., pockets. Nebr.

Plourightia morbosa (Schw.) Sacc., black-knot. Mich., Nebr.

Sclerotinia cinerea (Bon.) Schroet. (*Monilia oregonensis* Barss and Posey), blossom blight. Wash., Oreg.

S. fructicola (Wint.) Rehm (*S. americana* (Wormald) Norton and Ezekiel), brown-rot. Widespread.

Tranzschelia punctata (Pers.) Arth., rust. Nebr., Kans., Tex., Oreg., Calif.

PRUNUS—Continued.*Prunus* spp., plum.

- Armillaria mellea* (Vahl) Quel., root-rot. Minn., N. Dak., Tex., Calif.
Bacillus amyovorius (Burr.) Trev. (*Erwinia amylovora* (Burr.) Com. S. A. B.), blight. Vt., N. J., Pa., Miss., Tex., Ohio, Mich., S. Dak., Nebr., Colo., Ariz., Wash.
Bacterium cerasi F. L. Griffin, bacterial gummosis. Tex., Kans., Ariz., Calif.
B. pruni EFS. (*Phytopomonas pruni* (EFS.) Com. S. A. B.), bacterial spot. General east of Great Plains.
B. tumefaciens EFS. and Town. (*Phytopomonas tumefaciens* (EFS. and Town.) Com. S. A. B.), crown-gall. Occurs in widely scattered States.
Botrytis cinerea Auct., fruit-rot. Wash.
Cercospora circumscissa Sacc., shot-hole. N. Y., Kans., Wash.
Cladosporium carpophilum Thuem., scab. Widespread.
Coccomyces prunophorae Hig., leaf-spot. General.
Coryneum beijerinckii Oud., blight. Pacific coast, Idaho.
Diplodia pruni Fckl., twig-blight. Fla.
Exoascus communis Sadeb., pockets. Iowa.
E. mirabilis Atk., hypertrophy. Widespread east of Great Plains.
E. pruni (Berk.) Fckl., pockets. General.
Fomes fulvus Fr., brown heartwood rot. Minn., Nebr.
F. pinicola Fr., brown crumbly rot. Oreg.
Heterodera radicolica (Greef) Muell., root-knot. S. C.
Lasiodiplodia triflorae Hig., wilt. Md., Va., Ga.
Lenzites saepiaria Fr., dry-rot. Oreg.
Ozonium omnivorum Shear (*Phymatotrichum omnivorum* (Shear) Dug.), root-rot. Ariz.
Phoradendron flavescens (Pursh) Nutt., mistletoe. Calif.
Phyllosticta circumscissa Cke., shot-hole. N. J., Ga., Wash.
P. congesta Heald and Wolf, blotch. Ga., Tex.
P. prunicola Sacc., leaf-spot. Minn.
Plourightia morbosa (Schw.) Sacc., black-knot. General except Pacific coast.
Podosphaera oxycanthae (DC.) D By., powdery mildew. Widespread east of Great Plains.
Polyporus lacteus Fr., heart-rot. Va., Ind., Wash., Oreg.
Polystigma rubrum (Pers.) DC., red leaf-spot.
Pythiacystis citrophthora E. H. and R. E. Smith, brown-rot. Calif.
Schizophyllum commune Fr., sap-rot. Minn., Nebr.
Sclerotinia fruticicola (Wint.) Rehm (*S. americana* (Wormald) Norton and Ezekiel), brown-rot. General.
Septobasidium sp., canker. Fla.
S. retiforme (Berk. and Curt.) Pat., canker. Ala., Fla.
Septoria cerasina Pk., leaf-spot. Mass.
Trametes carnea (Nees) Cke., wood-rot. Oreg.
Tranzschelia punctata (Pers.) Arth., rust. Widespread.
Valsa leucostoma (Pers.) Fr., die-back. Pa., S. C., Tex., Ohio, Mo., Colo., Idaho.
- P. americana*, American wild plum.
- Cercospora circumscissa* Sacc., shot-hole. Nebr.
C. prunicola Ell. and Ev., leaf-spot. Ala., La.
Cladosporium carpophilum Thuem., scab. Wis., Iowa, Calif.
Coccomyces prunophorae Hig., shot-hole. Ind., S. Dak.
Exoascus cerasi (Fckl.) Sadeb., witches'-broom. Ill., Iowa.
E. communis Sadeb., pockets. General over range of host.
E. decipiens Atk., leaf-curl. Mont.
E. mirabilis Atk., hypertrophy. Miss.
E. pruni Fckl., pockets. N. Dak., Iowa, Miss.
Fomes fulvus Fr., brown heartwood rot. Ohio, Ind., N. Dak., S. Dak., Nebr., Kans.
Phyllosticta circumscissa Cke., leaf-spot. Ill.
P. virginiana (Ell. and Hals.) Seaver, leaf-spot. Kans.
Plourightia morbosa (Schw.) Sacc., black-knot. General over range of host.
Podosphaera oxycanthae (DC.) D By., powdery mildew. General over range of host.
Sclerotinia fruticicola (Wint.) Rehm (*S. americana* (Wormald) Norton and Ezekiel), brown-rot. N. Y., Va., Miss., Iowa.

PRUNUS—Continued.

P. americana, American wild plum—Continued.

Septoria pruni Ell., leaf-spot. Ky., Kans.

S. purpureocincta Ell. and Ev., leaf-spot. Kans.

Tranzschelia punctata (Pers.) Arth., rust. General over range of host.

PSEUDOTSUGA.

P. douglasii, Douglas fir.

Botrytis cinerea Auct., gray-mold twig-blight. Conn.

Corticium vagum Berk. and Curt., damping-off. Colo.

Echinodontium tinctorium Ell. and Ev., brown stringy rot. Utah, Mont., Idaho.

Fomes officinalis Fr., reddish brown-rot. Mont.

F. pinicola Fr., brown crumbly rot. Western States.

F. roseus (Alb. and Schw.) Fr., brown pocket rot. Ariz., Wash.

Melampsora albertensis Arth., rust. Mont., Colo., Utah, Wash.

Phacidium infestans Karst., needle blight. Idaho.

Polyporus schweinitzii Fr., red-brown butt-rot. Mont., Idaho, Wash., Oreg.

P. sulphureus (Bull.) Fr., brown-checked wood-rot. Idaho, Wash.

Pythium debaryanum Hesse, damping-off.

Razoumofskya douglasii (Engelm.) O. Kuntze, mistletoe. Colo., Pacific Northwest.

Rhabdocline pseudotsugae Syd., needle cast. Oreg.

Sparassis radicata Weir, yellow root-rot. Mont., Pacific Northwest.

Trametes pini (Brot.) Fr. (*Fomes pini* (Thore) Karst.), honeycomb rot. Mont., Wyo., Idaho, Wash.

PSIDIUM.

P. guajava, guava.

Clitocybe monadelpha (Morgan) Sacc., root-rot. Fla.

Colletotrichum sp., die-back. Fla.

Glomerella cingulata (Ston.) Spauld. and Schrenk, ripe-rot. Fla.

PTELEA.

P. trifoliata, hoptree.

Cercospora afflata Wint., leaf-spot. Mo.

C. pteleae Wint., leaf-spot. Ind., Mo.

Phleospora pteleae Tharp. Utah.

Puccinia windsoriae Schw., rust. Scattering throughout range of host.

Septoria pteleae Ell. and Ev., leaf-spot. Ind.

PUNICA.

P. granatum, pomegranate.

Cercospora lythracearum Heald and Wolf, leaf-spot. Tex.

Heterodera radicolica (Greef) Muell., root-knot.

Sterigmatocystis castanea F. Patterson, fruit-rot. Tex., Ariz., Calif.

PYRACANTHA.

P. coccinea, scarlet firethorn.

Bacillus amylovorus (Burr.) Trev. (*Erwinia amylovora* (Burr.) Com. S. A. B.), blight. Idaho, Wash.

PYRUS.

P. communis, pear.

Armillaria mellea (Vahl) Quel., root-rot. Pacific coast.

Bacillus amylovorus (Burr.) Trev. (*Erwinia amylovora* (Burr.) Com. S. A. B.), blight. General.

Bacterium tumefaciens EFS. and Town. (*Phytoplasma tumefaciens* (EFS. and Town.) Com. S. A. B.), crown-gall. General.

Botryosphaeria ribis Gross. and Dug., black-rot. Va.

Botrytis sp., spur-blight. Oreg.

B. cinerea Auct., fruit-rot. Wash.

Cephalothecium roseum Cda., pink-mold rot. Conn., R. I., Ill.

Cercospora minima Tr. and Earle, leaf-spot. Miss., Tex.

C. piri Farl., leaf-spot. Mich.

Corticium stevensii Burt (*Hypochnus ochroleucus* F. Noack), leaf-blight. W. Va., N. C., S. C., Ga., Fla., Ala., Tex.

PYRUS—Continued.

P. communis, pear—Continued.

- Coryneum foliicola* Fekl., leaf-spot. Ind.
Fabraea maculata (Lév.) Atk., leaf-blight. General.
Gloeodes pomigena (Schw.) A. S. Colby (*Phyllachora pomigena* (Schw.) Sacc.), sooty blotch. Mass. to N. C., westward to Ill., Tex.
Gloeosporium perennans Zeller and Childs, perennial canker. Wash., Oreg.
Glomerella cingulata (Ston.) Spauld. and Schrenk, bitter-rot. Conn., Mass., N. J., S. C., Ga., Tex., Ark.
Gymnosporangium blasdaleanum (Diet. and Holw.) Kern, incense-cedar rust. Oreg.
G. globosum Farl., rust. Conn., N. Y., Ohio, Colo.
G. nelsoni Arth., rust. Colo.
Hendersonia foliorum Fekl., leaf-spot. Tex.
Leptothyrium carpophilum Pass., flyspeck. Tex.
Mycosphaerella sentina (Fr.) Schroet., leaf-spot. General east of Great Plains; Oreg.
Myxosporium corticolum Edg. (*Dermatea corticola* (Edg.) Arn.), surface bark canker. N. Y., Mich., Oreg.
Nectria galligena Bres., European canker. Oreg.
Neofabraea malicorticis (A. B. Cordley) Jack., anthracnose. Wash., Oreg.
Nummularia discreta (Schw.) Tul., blister canker. Del.
Ozonium omnivorum Shear (*Phymatotrichum omnivorum* (Shear) Dug.), root-rot. Tex., N. Mex., Ariz.
Phoradendron flavescens (Pursh) Nutt., mistletoe. Tex.
P. flavescens macrophyllum Engelm., mistletoe. Ariz., N. Mex.
Phyllosticta pyrorum Cke., leaf-spot. S. C., Ill.
Phylospora malorum (Pk.) Shear (*P. cydoniae* Am. Auct.), black-rot. Widespread east of Great Plains; Oreg.
Phytophthora cactorum (Leb. and Cohn) Schroet., rot. Conn., Ind., Mich.
Podosphaera leucotricha (Ell. and Ev.) Salm., powdery mildew. Colo., Wash.
P. oxyacanthae (DC.) D By., powdery mildew. Colo.
Pythiacystis citrophthora E. H. and R. E. Smith, citrus brown-rot. Calif.
Sclerotinia cinerea (Bon.) Schroet. (*Monilia oregonensis* Barss and Posey), blossom blight. Pacific coast.
S. fructicola (Wint.) Rehm (*S. americana* (Wormald) Norton and Ezekiel), brown-rot. Conn., Pa., Del., S. C., Ga., Fla., Miss., Ind., Ill., Wash.
Septoria nigerina Fekl., leaf-spot. N. Y.
Venturia pyrina Aderh., scab. General.
Xylaria sp., root-rot. Ind.
 Bitter-pit, undet. N. Y., Wash., Oreg.
 Brown-blotch, undet. N. J.
 Chlorosis, nonpar. Tex., N. Mex., Wash.
 Measles, undet. Fla.

QUERCUS.

Quercus spp., oaks.

- Actinopelte japonica* Sacc., leaf-spot. N. J.
Armillaria mellea (Vahl) Quel., root-rot. Widespread.
Cercospora polytricha Cke., leaf-spot. S. C., Ga.
Cronartium cerebrum (Pk.) Hedge. and Long, rust. East of Great Plains; Calif.
C. fusiforme (Pk.) Hedge. and Hunt, rust. Ohio.
C. strobilinum (Arth.) Hedge. and Hahn, rust. Fla.
Cytindrosporium microspilum Sacc. and Wint., leaf-spot. Mo.
Cytospora chrysosperma (Pers.) Fr., canker. R. I., N. J., Pa.
Diplodia longispora Cke. and Ell., twig-blight. Conn., N. Y., N. J., Pa., Md., Va., W. Va.
Fomes applanatus Fr. (*Ganoderma applanatum* (Pers.) Pat.), white-streaked rot. Me., N. H., Pa., Ky., Minn., Calif.
F. everhartii (Ell. and Gall.) Schrenk, white-rot. Conn., N. J., Pa., N. C., Ohio, Ind., Minn., Mont.
F. fomentarius (L.) Fr., white sapwood rot.
F. igniarius (L.) Fr., white heart-rot. Conn., Mass., N. C., Minn., Okla.
F. lobatus Schw., spongy white-rot. Ark.

QUERCUS—Continued.

Quercus spp., oaks—Continued.

- Gnomonia veneta* (Sacc. and Speg.) Kleb., anthracnose. East of Great Plains.
- Hydnum erinaceus* Fr., wet heartwood rot. Ala., Ind., Ark.
- Leptothyrium dryinum* Sacc., leaf-spot. N. J., Va., Ga., Miss., Tex., Wis.
- Marssonina martini* (Sacc. and Ell.) Magn., leaf-spot. Miss. Valley; Pa., Va.
- M. quercus* Pk., leaf-spot. Ind., Mo., Tex.
- Microsphaera alni* (Wallr.) Wint., powdery mildew. General east of Great Plains; Wash., Calif.
- Monochaetia desmazierii* Sacc., large leaf-spot. Pa., Southeastern States.
- Nectria cinnabarina* Fr., canker. Mass., Pa., Ala.
- N. galligena* Bres., European canker. Oreg.
- Ozonium omnivorum* Shear (*Phymatotrichum omnivorum* (Shear) Dug.), root-rot. Tex.
- Phoradendron flavescens* (Pursh) Nutt., mistletoe. Tex., Ind., Ariz.
- P. villosum* Nutt., mistletoe. Oreg.
- Phyllactinia corylea* (Pers.) Karst., powdery mildew. East of Miss. River.
- Phyllosticta agrifolia* Ell. and Ev., leaf-spot. Calif.
- P. livida* Ell. and Ev., leaf-spot. Fla., La., Wis., Calif.
- P. ludoviciana* Ell. and Mart., leaf-spot. Fla., La.
- P. phomiformis* Sacc., leaf-spot. Occurs scatteringly east of Great Plains.
- P. quercus* Sacc. and Speg., leaf-spot. N. Y., Ind., Wis.
- P. quercus prini* Ell. and Ev., leaf-spot. W. Va.
- P. vesicatoria* Thuem., leaf-spot. S. C.
- P. wislizeni* Ell. and Ev., leaf-spot. Calif.
- Polyporus berkeleyi* Fr., string-rot and ray-rot. N. Y., Pa., N. C., Ala., Ark., Ind., Mo.
- P. croceus* Fr., white-piped rot. N. Y., N. C., Ark., Ohio, Ind.
- P. dryadeus* Fr., white wood-rot. Pa., Va., Tex., Okla., Ark., Ohio, Ind., Minn.
- P. frondosus* Fr., straw-colored rot. Mass., Va., Ark., Ind.
- P. obtusus* Berk., soft heartwood rot. Tenn., Ga., Ala., Minn.
- P. rhoades* Fr., white pocket rot. General.
- P. spraguei* Berk., heart-rot.
- P. sulphureus* (Bull.) Fr., brown-checked wood-rot. General.
- Rhytisma erythrosporium* Berk. and Curt., tar-spot. Tex.
- Seporia dryina* Cke., leaf-spot. Mass., S. C., Kans.
- S. neglecta* Earle, leaf-spot. Ala.
- Sphaeropsis quercina* Cke. and Ell., twig canker. Pa.
- Sphaerotheca lanestris* Hark., powdery mildew. Ala., Miss., Ind., Ill., Iowa, Calif.
- Stereum subpileatum* Berk. and Curt., honeycomb heart-rot. Southern States; Ohio, Ky., Mo.
- Strumella coryneoidea* Sacc. and Wint., canker. Conn., Mass., N. Y., Pa., Ill., Mo., Oreg.
- Taphrina coerulescens* (Mont. and Desm.) Tul., leaf blister. General east of Great Plains.

RADICULA.

R. armoracia, horseradish.

- Albugo candida* (Pers.) O. Kuntze, white-rust. Mass. to Mont., south to Kans.
- Alternaria brassicae* (Berk.) Sacc., leaf-spot. Nebr., Mo.
- A. herculea* (Ell. and Mart.) J. A. Elliott, gray leaf-spot. Conn., N. J., Ind.
- Bacillus* sp., bacterial root-rot. N. J.
- Cercospora armoraciae* Sacc., leaf-spot. Northern States.
- Corticium vagum* Berk. and Curt., stem-rot. N. J., Mich., Ill., Wash.
- Ozonium omnivorum* Shear (*Phymatotrichum omnivorum* (Shear) Dug.), root-rot. Tex.
- Phyllosticta decidua* Ell. and Kell., leaf-spot. Wis.
- P. orbicula* Ell. and Ev., leaf-spot. N. Y.
- Ramularia armoraciae* Fekl., leaf-spot. General.
- Thielavia basicola* (Berk. and Br.) Zopf, black root-rot. N. J.

RAPHANUS.*R. sativus*, radish.*Actinomyces scabies* (Thax.) Gues., scab. Ohio, Ind.*Albugo candida* (Pers.) O. Kuntze, white-rust. General.*Alternaria brassicae macrospora* Sacc., leaf-spot. Conn.*Ascochyta* sp., leaf-spot. Mass.*Bacillus carotovorus* L. R. Jones (*Erwinia carotovora* (Jones) Com. S. A. B.), soft-rot. N. Y.*Bacterium campestre* (Pam.) EFS. (*Phytophthora campestre* (Pam.) Com. S. A. B.) black-rot. Ohio.*Cercospora cruciferarum* Ell. and Ev., leaf-spot. Ala.*Corticium vagum* Berk. and Curt., stem-rot. Mass., N. Y., Del., Ohio, Ill., Wash.*Erysiphe polygoni* DC., powdery mildew. Tex., Mo.*Peronospora parasitica* (Pers.) D By., downy mildew. Widespread.*Plasmodiophora brassicae* Wor., clubroot. Conn., N. Y., Pa., Minn.*Puccinia sarcobati* (Pk.) Bethel, rust. Southwestern States.*Pythium aphanidermatum* (Edson) Fitz., black-root. Widely scattered States east of Miss. River.*P. debaryanum* Hesse, damping-off. Va., Minn.*Sclerotinia sclerotiorum* (Lib.) Mass., stem-rot. Minn.**RESEDA.***R. odorata*, mignonette.*Cercospora resedae* Fekl., leaf-spot. Widespread east of Great Plains.*Corticium vagum* Berk. and Curt., stem-rot. Conn.*Fusarium* sp., root-rot, N. Y.**RHAMNUS.***R. cathartica*, buckthorn.*Cercospora rhamni* Fekl., leaf-spot. N. J.*Puccinia coronata* Cda., crown-rust. Vt., N. Y., Ill., Wis., Minn., Iowa, N. Dak., S. Dak.*R. purshiana*, cascara buckthorn.*Cylindrosporium rhamni* Ell. and Ev., leaf-spot. Idaho.*Marssonina rhamni* Ell. and Ev., leaf-spot. Wash.*Phyllosticta rhamnigena* Sacc., leaf-spot. Wash.*Puccinia coronata* Cda., crown-rust. Pacific Northwest; Mont.*Septoria blasdalei* Sacc. and Syd., leaf-spot. Calif.**RHEUM.***R. rhaponticum*, rhubarb.*Ascochyta rhei* Ell. and Ev., leaf-spot. General east of Rocky Mts.*Bacillus carotovorus* L. R. Jones (*Erwinia carotovora* (Jones) Com. S. A. B.), soft-rot. Ohio.*Colletotrichum erumpens* Sacc., anthracnose. Pa., W. Va., Ill.*Corticium vagum* Berk. and Curt., stem-rot. N. Y., Ill., Wash.*Ozonium omnivorum* Shear (*Phymatotrichum omnivorum* (Shear) Dug.), root-rot. Tex.*Peronospora rumicis* Cda., downy mildew. Calif.*Phyllosticta straminella* Bres., leaf-spot. N. Y., Pa., Ind., Ill., Minn., Mo., N. Dak., Nebr.*Phytophthora* sp., crown-rot. N. J., Pa., Del., Tenn., Ill., Mich., Mo.*P. cactorum* (Leb. and Cohn) Schroet., crown-rot. Pa.*P. parasitica rhei* G. H. Godfrey, foot-rot. Md., D. C., Va., Kans.*Puccinia rubella* (Pers.) Arth., rust. Nebr.*Sclerotium rolfsii* Sacc., stem-rot. Va.**RHODODENDRON.***Rhododendron* sp., rhododendron.*Armillaria mellea* (Vahl) Quel., root-rot. Wash.*Coccomyces rhododendri* (Schw.) Sacc., leaf-spot. W. Va. (on *R. maximum*).*Coryneum rhododendri* Schw., leaf-spot. Wash., Oreg. (on *R. californicum*).*Cryptostictis* sp., leaf-spot. Pacific coast.*Exobasidium vaccinii* (Fekl.) Wor., hypertrophy. Pa., N. C., Fla., Ind., Iowa, Wash., Oreg.

RHODODENDRON—Continued.*Rhododendron* sp., rhododendron—Continued.*Hendersonia concentrica* Ell. and Ev., leaf-spot. N. C.*Laestadia rhodorae* Berl. and Vogl., leaf-spot. N. Y.*Melampsoropsis piperiana* Arth., rust. Oreg., Wash. (on *R. californicum*).*M. roanensis* Arth., rust. Tenn.*Pestalozzia funerea* Desm., leaf-spot. Va.*P. guepini* Desm., leaf-spot. Conn., N. Y., N. J., Pa., Del., Ind., Wash.*Phyllosticta maxima* Ell. and Ev., leaf-spot. Conn., N. Y., N. J.*P. saccardoii* Thuem., leaf-spot. N. Y.*Septoria rhododendri* Cke., leaf-spot. Me.*Sporocybe azaleae* (Pk.) Sacc., bud-blight. Pacific coast.Witches'-broom and white-leaf, undet. Pacific coast (on *R. californicum*).**RHODORA.***R. canadense*, rhodora.*Exobasidium vaccinii* (Fekl.) Wor., hypertrophy. N. H.*Pucciniastrum myrtilli* (Schum.) Arth., rust. N. H.**RHODIYOS.***R. kerrioides*, jetbead.*Ascochyta rhodotyphi* H. W. Anderson, leaf-spot. Ill.**RHUS.***R. copallina*, shining sumac.*Cercospora copallina* Cke., leaf-spot. S. C., Fla., La.*C. rhoina* Cke. and Ell., leaf-spot. Widespread east of Great Plains.*Cylindrosporium toxicodendri* Ell. and Ev., leaf-spot. N. J.*Exoascus purpurascens* (Ell. and Ev.) Sadeb., leaf-curl. Mass., N. J., Ga.*Sphaerotheca humuli* (DC.) Burr., powdery mildew. Ill., Mo.*R. cotinus*, smoketree.*Cercospora rhoina* Cke. and Ell., leaf-spot. Ala.*Septoria rhoina* Berk. and Curt., leaf-spot. New England, N. Y.*R. glabra*, smooth sumac.*Cercospora rhoina* Cke. and Ell., leaf-spot. Va. to Nebr. and southward.*Cladosporium aromaticum* Ell. and Ev. Nebr.*Septoria rhoina* Berk. and Curt., leaf-spot. Ill., Minn., Kans.*Sphaerotheca humuli* (DC.) Burr., powdery mildew. Iowa, Miss.*R. typhina*, staghorn sumac.*Cercospora rhoina* Cke. and Ell., leaf-spot. Md.*Exoascus purpurascens* (Ell. and Ev.) Sadeb., leaf-curl. Md.*Phyalospora malorum* (Pk.) Shear (*P. cydoniae* Am. Auct.), canker. N. Y.*Septoria rhoina* Berk. and Curt., leaf-spot. Miss., Iowa.*Sphaerotheca humuli* (DC.) Burr., powdery mildew. Pa.**RIBES.***R. nigrum*, European black currant.*Cronartium ribicola* Fisch., blister rust. New England, N. Y., Wash., Oreg.*Microsphaera grossulariae* (Wallr.) Lév., powdery mildew. Mont.*Mycosphaerella grossulariae* (Fr.) Lindau, leaf-spot. Conn., Iowa.*Pseudopeziza ribis* Kleb., anthracnose. N. H.*Puccinia grossulariae* (Schum.) Lagh., rust. Conn.*R. vulgare*, red currant, white currant.*Botryosphaeria ribis* Gross. and Dug., cane-blight. Mass., Conn., N. Y. to Va., west to Ill.*Cercospora angulata* Wint., leaf-spot. N. Y. to Va., west to Iowa and Kans.*Cronartium ribicola* Fisch., blister rust. North Atlantic States; Mich., Minn.*Fomes ribis* (Schum.) Fr., root-rot. N. Y., N. J., Ind., Utah.*Glomerella cingulata* (Ston.) Spauld. and Schrenk, bitter-rot. Conn.*Mycosphaerella grossulariae* (Fr.) Lindau, leaf-spot. General in Northern States.*Nectria ditissima* Tul., canker. N. Y.*Phyllosticta grossulariae* Sacc., leaf-spot. N. J.*Plasmopara ribicola* Schroet., downy mildew. Wis.

RIBES—Continued.

R. vulgare, red currant, white currant—Continued.

- Phloeetria berolinensis* Sacc., doubtfully parasitic on canes. Conn., Mass., Md., Ohio, Mich., Ind., N. Dak., Utah.
Pseudopeziza ribis Kleb., anthracnose. Widespread in Northern States.
Puccinia grossulariae (Schum.) Lagh., rust. Mass., Conn., N. Y., Mich., Ind., Minn., N. Dak., Iowa.
Sphaerotheca mors-uvae (Schw.) Berk. and Curt., powdery mildew. Widespread in Northern States.

**R. grossulariae* and other species, gooseberry.

- Armillaria mellea* (Vahl) Quel., root-rot. Oreg.
Botrytis cinerea Auct., die-back. Wash., Oreg.
Cercospora sp., leaf-spot. N. Y., W. Va., Ind., Mich., Mo., Nebr.
Coleosporium ribicola (Cke. and Ell.) Arth., rust. Wyo., Colo., N. Mex.
Cronartium occidentale Hedge., Bethel, and Hunt, piñon blister rust. Colo., Ariz., Calif.
C. ribicola Fisch., blister rust. New England, Minn.
Leptosphaeria coniothyrium (Fekl.) Sacc., cane-blight. Ind., Mo.
Mycosphaerella grossulariae (Fr.) Lindau, leaf-spot. General in Northern States.
Phyllactinia corylea (Pers.) Karst., powdery mildew. N. Y.
Phyllosticta grossulariae Sacc., leaf-spot. N. J., Wis., Wash.
Plasmopara ribicola Schroet., downy mildew. W. Va., Minn., Oreg.
Pseudopeziza ribis Kleb., anthracnose. General in Northern States.
Puccinia grossulariae (Schum.) Lagh., rust. New England to N. Dak., south to Kans. and Md.
Ramularia sp., leaf-spot. Mich.
Septoria grossulariae (Lib.) West., leaf-spot. Me., Nebr., Kans.
Sphaerotheca mors-uvae (Schw.) Berk. and Curt., powdery mildew. General.

RICINUS.

R. communis, castor-bean.

- Bacterium solanacearum* EFS. (*Phytophthora solanacearum* (EFS.) Com. S. A. B.), bacterial wilt. Ga., Fla., Ala.
Botrytis cinerea Auct., gray-mold. Fla.
Cercospora albido-maculans Wint., leaf-spot. Mo.
C. ricinella Sacc. and Berl., leaf-spot. Gulf States, Calif.
Corticium vagum Berk. and Curt., damping-off. Fla., Kans.
Heterosporium sp. Calif.
Ozonium omnivorum Shear (*Phymatotrichum omnivorum* (Shear) Dug.), root-rot. Tex.
Sclerotinia ricini G. H. Godfrey, gray-mold. Fla., Miss., La., Tex.

ROBINIA.

R. pseudacacia, black locust.

- Cylindrosporium solitarium* Heald and Wolf, leaf-spot. Tex.
Fomes rimosus Berk., yellow wood-rot. Widespread east of Great Plains.
F. robiniae Murr., spongy heart-rot. Miss. Valley and Eastern States.
Gloeosporium revolutum Ell. and Ev., leaf-spot. N. J.
Ozonium omnivorum Shear (*Phymatotrichum omnivorum* (Shear) Dug.), root-rot. Tex.
Phoradendron flavescens macrophyllum Engelm., mistletoe. Ariz., N. Mex.
Polyporus obtusus Berk., soft heartwood rot.
P. sulphureus (Bull.) Fr., brown-checked wood-rot. Mass.
Septoria curvata (Rabh. and A. Braun) Sacc., leaf-spot. Ohio.
Trametes robiniphila Murr., white heart-rot. Mich.

ROSA.

Rosa spp., rose (cultivated and wild species).

- Armillaria mellea* (Vahl) Quel., root-rot. Oreg.
Bacterium tumefaciens EFS. and Town. (*Phytophthora tumefaciens* (EFS. and Town.) Com. S. A. B.), crown-gall. Widespread.
Botryosphaeria ribis Gross. and Dug., cane-blight. Md., Va.
Botrytis cinerea Auct., bud-blight. General.
Cercospora rosicola Pass., leaf-spot. General east of Great Plains; Wash.
C. rosigena Tharp, leaf-spot. Tex.

ROSA—Continued.

Rosa spp., rose (cultivated and wild species)—Continued.

- Cladosporium fuscum* Lk., leaf-spot. Miss., Minn.
Coniothyrium rosarum Cke. and Hark., graft canker. N. J., Iowa.
Coryneum sp., stem canker. Wash.
C. microstictum Berk. and Br., canker. Pa.
Cylindrocladium scoparium Morgan, crown canker. Mass., N. Y., Pa., Ga., Ind., Mich., Mo.
Diaporthe umbrina A. Jenkins, canker. Atlantic coast, W. Va., Ky., Miss.
Dicoccum rosae Bon., blight, leaf-spot. Fla., Ind.
Diplocarpon rosae Wolf, black-spot. General.
Diplodia sp., twig-blight. Fla.
Discosia artocreas (Tode) Fr., blossom blight. La.
Dothiorella sp., blossom blight. La.
Gloeosporium rosae Hals., twig-blight. Widespread east of Miss. River; Tex., Okla.
Heterodera radicolica (Greef) Muell., root-knot. N. J., W. Va., Ala., Ohio, Mich., Nebr.
Leptosphaeria coniothyrium (Fckl.) Sacc., cane-blight. General.
Ozonium omnivorum Shear (*Phymatotrichum omnivorum* (Shear) Dug.), root-rot. Tex.
Peronospora sparsa Berk., downy mildew. N. Y., Pa., Ohio, Tex., Calif.
Phomopsis sp., canker. Ky.
Phragmidium americanum (Pk.) Diet., rust. Widespread in Northeastern States; upper Miss. Valley.
P. disciflorum (Tode) G. F. James, rust. General.
P. montivagum Arth., rust. Western States.
P. rosae-acicularis Liro, rust. Mich., Wis., Minn., N. Dak., Mont., Idaho, Alaska.
P. rosae-arkansanae Diet., rust. Widespread.
P. rosae-californicae Diet., rust. Pacific coast.
P. rosae-setigerae Diet., rust. Upper Miss. Valley.
P. speciosum Cke., rust. General.
P. subcorticinum (Schrank) Wint., rust. Widespread.
Phyllosticta rosae Desm., leaf-spot. Ind., Fla.
Physalospora malorum (Pk.) Shear (*P. cydoniae* Am. Auct.), canker. Tex.
Sclerotinia sp., blight. Miss.
Septoria rosae Desm., leaf-spot. Miss.
Sphaerotheca humuli (DC.) Burr., powdery mildew. Conn., Pa., Tex., Ohio, Mich., Wis., Nebr., Calif.
S. pannosa (Wallr.) Lév., powdery mildew. General.
Uromyces rosicola Ell. and Ev., rust. Nebr.

RUBUS.

Rubus sp., blackberry.

- Armillaria mellea* (Vahl) Quel., root-rot. Wash.
Bacterium tumefaciens EFS. and Town. (*Phytoplasma tumefaciens* (EFS. and Town.) Com. S. A. B.), crown-gall. General.
Botrytis cinerea Auct., gray-mold. General on harvested fruit.
Cercospora rubi Sacc., blotch. Fla., La., Ill.
Corticium vagum Berk. and Curt., crown-rot. Colo.
Cylindrosporium rubi Ell. and Morgan, leaf-spot. N. C.
Fusarium sp., rosette. Md., Gulf States.
Fusisporium rubi Wint., double-blossom. N. Y., N. J., Del., Md., Va., Tenn., south to Fla., Ala., La., Ill.
Gloeodes pomigena (Schw.) A. S. Colby (*Phyllachora pomigena* (Schw.) Sacc.), sooty blotch. Ind.
Gymnoconia interstitialis (Schl.) Lagh., orange rust. General, especially in Eastern States.
Kuehneola uredinis (Lk.) Arth., yellow rust. General east of Miss. River.
Leptosphaeria coniothyrium (Fckl.) Sacc., cane-blight. East of Great Plains except Southern States; Pacific Northwest.
Leptothyrium pomi (Mont. and Fr.) Sacc., flyspeck. Ind.
Mycosphaerella rubi E. W. Roark, leaf-spot. General.
M. rubina (Pk.) Jacz., spur-blight. N. Y., Wis., Minn.
Peronospora rubi Rabh., downy mildew. Wis.
Pezizella lythri (Desm.) Shear and B. O. Dodge, fruit-rot.

RUBUS—Continued.

Rubus sp., blackberry—Continued.

Phragmidium imitans Arth., leaf-rust. Wash.

Plectodiscella veneta (Speg.) Burk., anthracnose. General.

Sphaerotheca humuli (DC.) Burr., powdery mildew. Ohio, Ill., Minn.

Verticillium alboatrum Reinke and Berth., bluestem, wilt. N. Y., Minn., Wash.

Dwarf, undet. Wash., Oreg.

Mosaic, undet. N. Y., Ind., Iowa, Oreg., Calif.

Rubus sp., dewberry (cultivated and wild).

Cercospora rubi Sacc., blotch. Fla., La., Tex., Ark.

Fusisporium rubi Wint., double-blossom. N. Y., N. J., Del., Md., Miss., La., Tex., Ohio.

Gymnoconia interstitialis (Schl.) Lagh. (not on *Lucretia* dewberry), orange rust. General, especially in Eastern States.

Kuehneola uredinis (Lk.) Arth., yellow rust. General east of Miss. River.

Leptosphaeria coniothyrium (Fckl.) Sacc., cane-blight. N. C., Miss., Idaho.

Mycosphaerella rubi E. W. Roark, leaf-spot. General.

Peronospora potentillae D By., downy mildew. Conn.

P. rubi Rabb., downy mildew. Fla., Wash.

Pezizella lythri (Desm.) Shear and B. O. Dodge, fruit-rot.

Phyllosticta ruborum Sacc., leaf-spot. N. Y., Miss.

Plectodiscella veneta (Speg.) Burk., anthracnose. General.

Pucciniastrum americanum (Farl.) Arth., leaf-rust. Wis. (on **R. arcticus triflorus*).

Sphaerotheca humuli (DC.) Burr., powdery mildew. Pa.

Rubus sp., Logan blackberry.

Armillaria mellea (Vahl) Quel., root-rot. Oreg.

Bacterium tumefaciens EFS. and Town. (*Phytomonas tumefaciens* (EFS. and Town.) Com. S. A. B.), crown-gall. Wash., Oreg.

Corticium vagum Berk. and Curt., crown-rot. Wash.

Mycosphaerella rubi E. W. Roark, leaf-spot. Mich., Wash., Oreg.

M. rubina (Pk.) Jacz., spur-blight. Wash.

Plectodiscella veneta (Speg.) Burk., anthracnose. N. Y., Wash., Oreg.

Dwarf, undet. Wash., Oreg.

Mosaic, undet. Wash., Oreg., Calif.

Rubus sp., raspberry.

Armillaria mellea (Vahl) Quel., root-rot. Wash., Oreg.

Ascospora ruborum (Oud.) S. M. Zeller, leaf-spot. Mass., Oreg.

Bacterium tumefaciens EFS. and Town. (*Phytomonas tumefaciens* (EFS. and Town.) Com. S. A. B.), crown-gall. General.

Botrytis cinerea Auct., gray-mold rot. General on harvested fruit.

Cercospora rubi Sacc., blotch. Fla., Ala.

Corticium vagum Berk. and Curt., crown-rot. Idaho.

Cuscuta sp., dodder. Wis.

Cylindrosporium rubi Ell. and Morgan, leaf-spot. Tex., Ohio, Wis., Mo.

Fusisporium rubi Wint., double-blossom. N. Y., Pa., Md.

Gymnoconia interstitialis (Schl.) Lagh., orange rust. General, especially in Eastern States.

Leptosphaeria coniothyrium (Fckl.) Sacc., cane-blight. East of Great Plains except Southern States; Pacific Northwest.

Leptothyrium pomi (Mont. and Fr.) Sacc., flyspeck. Mass., Ind.

Mycosphaerella rubi E. W. Roark, leaf-spot. General.

M. rubina (Pk.) Jacz., spur-blight. Widespread in Northern States.

Ozonium omnivorum Shear (*Phymatotrichum omnivorum* (Shear) Dug.), root-rot. Tex.

Peronospora rubi Rabb., downy mildew. Wash.

Phragmidium imitans Arth., leaf-rust. Widespread in Northern States.

P. occidentale Arth., rust. Colo.

Phyllosticta bicolor Pk., leaf-spot. N. Y.

Plectodiscella veneta (Speg.) Burk., anthracnose. General.

Pucciniastrum americanum (Farl.) Arth., rust. Conn., Mass., Vt., Md., Va., Wis., Iowa, N. Dak.

Rhizopus nigricans Ehr., black-mold rot. General.

RUBUS—Continued.

Rubus sp., raspberry—Continued.

- Sphaerotheca humuli* (DC.) Wint., powdery mildew. Conn., N. Y., Ohio, Ill., Minn., Utah, Wash.
Verticillium alboatrum Reinke and Berth., bluestem, wilt. N. Y., Ohio, Mich., Minn., Wash., Oreg., Calif.
 Leaf-curl, undet. N. Y., Md., Pa., Ohio, Ind., Mich., Wis., Minn., Wash., Oreg., Calif.
 Mosaic, undet. Northeastern States; Minn., Pacific Northwest.
 Streak, undet. Conn., N. Y., Pa., Md., Ohio, Ind., Ill., Wis., Oreg.

RUDBECKIA.

R. laciniata, *goldenglow, coneflower.

- Cercospora tabacina* Ell. and Ev., leaf-spot. Wis.
Etyloma compositarum Farl., smut. Ohio, Iowa, Mo.
Erysiphe cichoracearum DC., powdery mildew. N. H., Conn., Md., W. Va., Ohio, Ind., Mich., Minn.
Phyllosticta rudbeckiae Ell. and Ev., leaf-spot. Wis., Iowa.
Plasmopara halstedii Farl., downy mildew. N. Dak., Iowa.
Ramularia rudbeckiae Pk., leaf-spot. N. Y., Pa., Mich., Iowa, Mont., Colo.
Septoria rudbeckiae Ell. and Hals., leaf-spot. Nebr., Kans.
Uromyces perigynius Hals., rust. Pa., Wis., Iowa, Mo., N. Dak., S. Dak., Nebr., Mont.
U. rudbeckiae Arth. and Holw., rust. Ind., Ill., Miss. River to Rocky Mts.; N. Mex.

SACCHARUM.

S. officinarum, sugarcane.

- Cercospora vaginæ* W. Krueger, red-spot. Fla.
Colletotrichum falcatum F. A. Went, red-rot. Gulf States; Ark.
Gnomonia iliou H. L. Lyon, stem-rot, Iliou disease. La.
Helminthosporium sacchari Butl., eye leaf-spot. Ga., Fla., Miss.
Heterodera radicolica (Greef) Muell., root-knot. Ga., Fla.
Leptosphaeria sacchari Van Breda de Haan, ring-spot. Fla., Ala.
Marasmius sacchari J. H. Wakker, root-rot. Gulf States.
M. stenophyllus Mont., root-rot. La., Tex.
Melanconium sacchari Mass., rind disease. Fla., La.
Phyllosticta sp., leaf-spot. Ga.
Sclerotium rolfsii Sacc., sheath-rot. Ga., Fla., Ala., La.
Thielaviopsis paradoxa (DeSeyn.) Hoehn., pineapple disease. Miss., La.
 Mosaic, undet. Gulf States; Ga., Ark.

SALIX.

Salix spp., willow.

- Bacterium tumefaciens* EFS. and Town. (*Phytomonas tumefaciens* (EFS. and Town.) Com. S. A. B.), crown-gall. Conn., Tex.
Cercospora salicina Ell. and Ev., leaf-spot. Ill., La., Tex.
Coryneum salicinum (Cda.) Sacc., leaf-spot. N. Dak., Alaska.
Cytospora chrysosperma (Pers.) Fr., canker. Western States; Ind., Minn.
Gloeosporium maculans Pk., leaf-spot. Idaho.
G. salicis West., leaf-spot. N. Y., N. J., Wis., Oreg.
Marssonina sp., twig-blight. Wash.
Marssonina populi (Lib.) Magn., leaf-spot. Wis.
Melampsora americana Arth., rust. General.
M. arctica Rostr., rust. Colo.
M. bigelowii Thuem., leaf-rust. General.
M. confluens (Pers.) Jack., rust. General, especially in Western States.
Nectria galligena Bres., European canker. Oreg.
Phoradendron flavescens (Pursh) Nutt., mistletoe. Ind., Calif.
Phyllosticta apicalis Davis, leaf-spot. Wis.
Ramularia rosea (Fekl.) Sacc., leaf-spot. Wis., Colo.
Rhytisma salicinum Fr., tar-spot. Widespread.
Septoria albaniensis Thuem., leaf-spot. Mass., N. Y., Wis., Minn.
S. didyma Fekl., leaf-spot. Wis.
S. salicina Pk., leaf-spot. N. Y., Miss., Kans., Colo.
Trametes suaveolens Fr., white wood-rot. N. Y., N. J., Wis., Minn., Mo.
Uncinula salicis (DC.) Wint., powdery mildew. General.

SAMBUCUS.

Sambucus spp., elderberry.

Ascochyta wisconsinia Davis, leaf-spot. Wis.

Cercospora catenospora Atk., leaf-spot. Ala., Miss., Tex., Kans.

C. depazeoides (Desm.) Sacc., leaf-spot. N. Y., Ala., Ga., Ind., Iowa, Kans.

C. lateritia Ell. and Hals., leaf-spot. Iowa, Kans.

C. sambucina Ell. and Kell., leaf-spot. Wash.

Cercospora prolificans (Ell. and Holw.) Sacc., leaf-spot. Calif.

Cytospora chrysosperma (Pers.) Fr., canker. Kans., Wash.

Gloeosporium tineum Sacc., leaf-spot. Miss.

Microsphaera alni (Wallr.) Wint., powdery mildew. N. Y., Pa., Ohio, Ill.

M. grossulariae (Wallr.) Lév., powdery mildew. Widespread east of Great Plains.

Nectria cinnabarina Fr., canker. Ind., N. Dak., Mont., Wash.

Phyllosticta sp., leaf-spot. Pa.

Puccinia sambuci (Schw.) Arth., rust. East of Great Plains.

Ramularia glauca Ell. and Ev., leaf-spot. Colo.

R. sambucina Pk., leaf-spot. N. Y., Mo., Wash.

Septoria sambucina Pk., leaf-spot. Widespread.

Sphaeropsis sambucina (Cke.) Sacc., canker. N. Y., Ind., N. Dak., Kans., Colo., Calif.

SAPINDUS.

Sapindus sp., soapberry.

Cylindrosporium griseum Heald and Wolf, leaf-blight. Tex.

Glomerella cingulata (Ston.) Spauld. and Schrenk, bitter-rot. Fla.

Phoradendron flavescens (Pursh) Nutt., mistletoe. Tex.

Uncinula circinata Cke. and Pk., powdery mildew. Tex.

SASSAFRAS.

S. variifolium, sassafras.

Actinothyrium gloeosporioides L. R. Tehon, leaf-spot. Ill.

Armillaria mellea (Vahl) Quel., root-rot. Pa.

Fomes ribis (Schum.) Fr., root-rot. Mo.

Gloeosporium affine Ell. and Kell., leaf-spot. N. J., S. C., Ohio, Ind., Ill.

G. officinale Ell. and Ev., leaf-spot. Del.

Phoradendron flavescens (Pursh) Nutt., mistletoe. Tex.

Phyllosticta sassafras Cke., leaf-spot. Widespread in Eastern States.

SCHINUS.

S. molle, California peppertree.

Armillaria mellea (Vahl) Quel., root-rot. Calif.

Ozonium omnivorum Shear (*Phymatotrichum omnivorum* (Shear) Dug.), root-rot. Tex.

Trametes schini J. G. Brown, timber-rot. Ariz.

SECALE.

S. cereale, rye.

Bacterium translucens secalis C. S. Reddy, James Godkin, and A. G. Johnson, bacterial blight. Ind., Ill., Wis.

B. translucens undulosum EFS., L. R. Jones, and C. S. Reddy, black-chaff. Wis.

Claviceps purpurea (Fr.) Tul., ergot. General.

Colletotrichum graminicolum (Ces.) Wils., anthracnose. General east of Great Plains.

Erysiphe graminis DC., powdery mildew. General.

Fusarium culmorum leteius Sherb., seedling blight. Oreg.

Gibberella saubinetii (Mont.) Sacc., scab. Occurs scatteringly east of Great Plains.

Helminthosporium sativum Pam., King, and Bak., leaf-spot, foot-rot. Pa., N. Y., Minn.; probably other States.

Marasmius tritici P. A. Young. Ill.

Ophiobolus graminis Sacc., take-all. N. Y.

Puccinia dispersa Eriks., leaf-rust. General, especially east of Rocky Mts.

P. glumarum (Schm.) Eriks. and Henn., stripe-rust. Wash., Oreg.

P. graminis Pers., stem-rust. General.

SECALE—Continued.*S. cereale*, rye—Continued.*Rhynchosporium secalis* (Oud.) Davis, scald. Upper Miss. Valley; Wash., Calif.*Septoria secalis* Prill. and Del., leaf-blotch. East of Great Plains.*Tilletia tritici* (Bjerk.) Wint., covered smut. N. Y., Wash.*Tylenchus tritici* (Stein.) Bast., nematode. Va., S. C., Kans.*Urocystis occulta* (Wallr.) Rabh., stem-smut. General east of Great Plains, occasional in West.*Ustilago tritici* (Pers.) Rostr., loose-smut. Infrequent in Eastern States.

Mosaic, undet. Va., Ill.

SEQUOIA.*S. gigantea*, big tree.*Cercospora sequoiae* Ell. and Ev., leaf-spot. Pa.*S. sempervirens*, redwood.*Botrytis cinerea* Auct., gray-mold.*Hexagonia carbonaria* Berk. and Curt., brown-rot. Calif.*Polyporus amorphus* Fr., rot. Calif.*Trametes isabellina* Fr., white-rot. Calif.*T. odorata* (Wulf.) Fr., brown-rot. Calif.**SHEPHERDIA.***S. argentea*, silver buffaloberry.*Phyllactinia corylea* (Pers.) Karst., powdery mildew. Oreg.*Puccinia coronata* Cda., crown-rust. N. Dak., Nebr., Mont., Wyo., Colo.*Sphaerotheca humuli* (DC.) Burr., powdery mildew. Colo., Mont.*S. canadensis*, russet buffaloberry.*Puccinia caricis-shepherdiae* Davis, rust. N. Y., Mich., Wis., S. Dak.*P. coronata* Cda., crown-rust. Occurs scatteringly in Rocky Mt. States and Pacific Coast States.**SOJA.***S. max*, soybean.*Bacillus lathyri* Manns and Taub., streak. Del., Nebr.*Bacterium glycineum* Coerper, bacterial blight. Pa., Ind., Ill., Wis., Miss., La.*B. phaseoli sojense* Hedges, bacterial pustule. Va., N. C., S. C., La., Tex., Ark., Kans.*B. sojæ* Wolf, bacterial blight. Conn., N. C., S. C., La., Mich., Wis., Nebr.*B. solanacearum* EFS. (*Phytophthora solanacearum* (EFS.) Com. S. A. B.), bacterial wilt. N. C.*Botrytis cinerea* Auct., gray-mold. Ohio.*Cercospora cruenta* Sacc., leaf-spot. Ala.*Corticium vagum* Berk. and Curt., stem-rot. Tenn., Ind.*Diaporthe sojæ* S. G. Lehman, pod-blight. N. C., Ind.*Erysiphe polygoni* DC., powdery mildew. N. C.*Fusarium vasinfectum tracheiphilum* EFS., wilt. Southern States; Ind.*Glomerella cingulata* (Ston.) Spauld. and Schrenk, anthracnose. N. C.*Heterodera radicularis* (Greef) Muell., root-knot. S. C., Ark., Calif.*Ozonium omnivorum* Shear (*Phymatotrichum omnivorum* (Shear) Dug.), root-rot. Tex.*Peronospora sojæ* Wolf, downy mildew. Del., Ky., N. C.*P. trifoliorum* D By., downy mildew. N. Y.*Sclerotinia sclerotiorum* (Lib.) Mass., stem-rot. Va.*Sclerotium rolfsii* Sacc., stem-rot. N. C., S. C., Ala., Miss., La.*Septoria glycines* Takewo Hemmi, leaf-spot. Del.

Mosaic, undet. Widespread where crop is grown.

SOLANUM.*S. melongena*, eggplant.*Alternaria solani* (Ell. and Mart.) L. R. Jones and A. J. Grout, leaf-spot. Conn., N. Y., Pa., Del., Md., W. Va., Fla.*Ascochyta lycopersici* Brun. (*Didymella lycopersici* Kleb., *Diplodina destructiva* (Plow.) Petr.), leaf-spot. N. Y., Del., Ind.

SOLANUM—Continued.*S. melongena*, eggplant—Continued.

Bacterium solanacearum EFS. (*Phytomonas solanaceara* (EFS.) Com. S. A. B.), bacterial wilt. Southern States.

Botrytis cinerea Auct., gray-mold rot. Mass., Conn., Wash., Calif.

Colletotrichum atramentarium (Berk. and Br.) Taub., fruit-rot, anthracnose. General east of Great Plains; Utah.

Corticium vagum Berk. and Curt., stem-rot. Pa., N. J., Fla., Ala., La., Tex., Wash.

Diplodia sp., fruit-spot. Fla.

Fusarium spp., wilt. East of Miss. River; La., N. Mex.

Gloeosporium melongenae Ell. and Hals., anthracnose. General east of Great Plains.

Heterodera radicolica (Greef) Muell., root-knot. Southern States; Nev.

Ozonium omnivorum Shear (*Phymatotrichum omnivorum* (Shear) Dug.), root-rot. Tex.

Phoma sp., storage rot. Me.

Phomopsis vexans (Sacc. and Syd.) Harter, leaf-spot, fruit-rot. East of Great Plains; Calif.

Phyllosticta solani Ell. and Mart., leaf-spot. La.

Phytophthora sp., rot. Ind.

P. infestans (Mont.) D By., late-blight. N. Y.

Pythium debaryanum Hesse, damping-off. Conn.

Sclerotinia sclerotiorum (Lib.) Mass., stem-rot. Va., La.

Sclerotium rolfsii Sacc., stem-rot. Ga., La.

Verticillium alboatrum Reinke and Berth., wilt. Mass., N. Y., N. J., Pa., Va., S. C., Ga.

Mosaic, undet. Conn., Fla., Iowa.

S. tuberosum, potato.

Actinomyces scabies (Thax.) Gues., scab. General.

Alternaria solani (Ell. and Mart.) L. R. Jones and A. J. Grout, early-blight. General, especially east of Rocky Mts.

Armillaria mellea (Vahl) Quel., root-rot. Mich., Wis., Wyo., Pacific coast.

Bacillus spp., soft-rot. General, especially on harvested crop in transit and market.

B. phytophthorus O. Appel (*Erwinia atroseptica* (Van Hall) Com. S. A. B.), black-leg. General; reported from practically every State.

Bacterium solanacearum EFS. (*Phytomonas solanaceara* (EFS.) Com. S. A. B.), bacterial wilt. Southern States.

Cercospora concors (Casp.) Sacc., leaf-blotch. Vt., N. Y., W. Va., Ga., Ind., Mich.

C. solanicola Atk., leaf-spot. Ala.

Colletotrichum atramentarium (Berk. and Br.) Taub., anthracnose. N. Y., W. Va., Ohio, Fla., Utah, Oreg.

Corticium vagum Berk. and Curt., scurf, stem-rot. General; in every State.

Fusarium spp., dry rots. Common everywhere on harvested tubers.

F. eumartii C. W. Carpenter, stem-end rot. N. Y., Pa., Ohio, Nebr.

F. oxysporum Schl., wilt. Widespread; less destructive in more northern late-potato sections.

F. radicolica Woll., jelly end-rot. N. Y., Va., D. C., Miss.; not uncommon in Western States.

F. sulphureum Schl., tuber rot. N. Dak.

F. trichothecoides Woll., powdery dry-rot. Ohio, Wis., Minn., Iowa, S. Dak., Nebr., Ariz., Utah, Idaho, Wash., Oreg.

Heterodera radicolica (Greef) Muell., root-knot. Southern States, Kans., Nev., Pacific coast.

Oidium sp., powdery mildew. Pa.

Phoma sp. (doubtfully parasitic), stem-blight. New England, N. Y., Pa., Mich.

P. tuberosa I. E. Melhus, J. Rosenbaum, and E. S. Schultz, storage rot. Me., Pa.

Phytophthora infestans (Mont.) D By., late-blight. East of Great Plains; Pacific coast. Most frequent in Northeast.

Pythium debaryanum Hesse, leak. Conn., N. Y., N. J., N. C., Miss., La., Minn., Nebr., Mont., Wyo., Colo., Idaho, Wash., Calif.

SOLANUM—Continued.

S. tuberosum, potato—Continued.

- Rhizoctonia crocorum* (Pers.) DC., violet root-rot. N. Y., Nebr., Wash., Oreg.
Rhizopus nigricans Ehr., leak. Ohio, Idaho, Wash., Calif.
Sclerotinia sclerotiorum (Lib.) Mass., stem-rot. N. Y., Fla.
Sclerotium rolfsii Sacc., stem-rot. South Atlantic and Gulf Coast States.
Spondylocladium atrovirens C. O. Harz, silver scurf. General.
Spongospora subterranea (Wallr.) T. Johnson, powdery scab. Me., Conn., N. Y., Pa., S. C., Fla., Minn., Wyo., Wash., Oreg.
Synchytrium endobioticum (Schilb.) Perc., wart. Pa., Md., W. Va.
Verticillium albo-atrum Reinke and Berth., wilt. New England, N. Y., Pa., Ohio, Wis., N. Dak., Colo., Utah, Idaho, Pacific coast.
 Black-heart, nonpar. Frequent, especially as a result of overheating in transit.
 Curly-dwarf, undet. Frequent.
 Hollow-heart, nonpar. Frequently reported, especially in overgrown tubers.
 Hopperburn, undet. East of Great Plains.
 Internal brown-spot, nonpar. Frequent.
 Leaf-roll, undet. General.
 Leak, various causes. General (see also *Pythium debaryanum* and *Rhizopus nigricans*).
 Malnutrition, nonpar. New England, Middle Atlantic States, Minn., Wash.
 Mosaic, undet. General.
 Net-necrosis, undet. Frequent.
 Russet dwarf, undet. Idaho.
 Spindle-tuber, undet. Vt., N. Y., N. J., S. Dak., Nebr., Ky.
 Streak, undet. Atlantic Coast States, Mich., Minn., Idaho, Wash., Calif.
 Tipburn, nonpar. General.
 Witches'-broom, undet. Me., Mich., Minn.; Pacific Northwest.
 Yellow dwarf, undet. Vt., N. Y., N. J., Pa., Fla., S. Dak.

SOPHORA.

S. japonica, *pagoda tree.

- Microsphaeraalni* (Wallr.) Wint., powdery mildew. Conn.
Ozonium omnivorum Shear (*Phymatotrichum omnivorum* (Shear) Dug.), root-rot. Tex.

SORBUS.

Sorbus sp., mountain-ash.

- Bacillus amylovorus* (Burr.) Trev. (*Erwinia amylovora* (Burr.) Com. S. A. B.), blight. Mich., Minn.
Cytospora chrysosperma (Pers.) Fr., canker. Mont.
Gymnosporangium blasdaleanum (Diet. and Holw.) Kern, rust. Oreg.
G. cornutum (Pers.) Arth., rust. New England, N. Y., Mich., Wis., Mont., Wyo., Colo.
G. globosum Farl., rust. New England, N. Y.
G. juniperinum (L.) C. Martius, rust. Mont., Wyo., Colo., Wash.
G. nootkatensis (Trel.) Arth., rust. Wash., Alaska.
Nummularia discreta (Schw.) Tul., blister canker. Mass., Pa.
Phyllosticta sorbi West., leaf-spot. Mo.
Physalospora malorum (Pk.) Shear (*P. cydoniae* Am. Auct.), black-rot.
Polystictus hirsutus Fr., white sap-rot.
Valsa leucostoma (Pers.) Fr., die-back. Mont.
Venturia inaequalis (Cke.) Aderh., scab. Minn.

SPINACIA.

S. oleracea, spinach.

- Cercospora beticola* Sacc., leaf-spot. Mass., Tex.
C. dubia (H. Riess) Wint., leaf-spot. Mo.
C. flagelliformis Ell. and Hals., leaf-spot. N. J., Del., Ga., Ind., Minn.
Cladosporium macrocarpum Preuss, scab, black-mold. Pa., Del., Tex.
Colletotrichum spinaciae Ell. and Hals., anthracnose. Conn., N. Y., N. J., Va., La., Tex.
Corticium vagum Berk. and Curt., stem-rot. Pa., Ill., Wash.
Entyloma ellisii Hals., smut. N. J.

SPINACIA—Continued.

S. oleracea, spinach—Continued.

Fusarium sp., root-rot. Tex., Oreg.

F. spinaciae Sherb., wilt. Idaho.

Heterodera radicum (Greef) Muell., root-knot. Ind.

Heterosporium variabile Cke., leaf-spot. Conn., Mass., Va., Mo., Tex., Calif.

Macrosporium cheiranthi (Lib.) Fr., leaf-spot. Ohio.

Ozonium omnivorum Shear (*Phymatotrichum omnivorum* (Shear) Dug.), root-rot. Tex.

Peronospora effusa (Grev.) Ces., downy mildew. General.

Phyllosticta chenopodii Sacc., leaf-spot. N. J., Del., Va.

Phytophthora sp., crown-rot. N. J., Ind.

Puccinia sarcobati (Pk.) Bethel, rust. Ariz., Wash., Oreg.

Pythium debaryanum Hesse, damping-off. Conn.

Malnutrition, nonpar. Va.

Mosaic, undet. Widespread.

SPIRAEA.

Spiraea sp., spirea.

Bacillus amylovorus (Burr.) Trev. (*Erwinia amylovora* (Burr.) Com. S. A. B.), blight. Md.

Cercospora rubigo Cke. and Hark., leaf-spot. Kans.

Cylindrosporium filipendulae Thuem., leaf-spot. Wis., Wash., Oreg.

Ozonium omnivorum Shear (*Phymatotrichum omnivorum* (Shear) Dug.), root-rot. Tex.

Podosphaera oxycanthae DC., powdery mildew. New England, Ohio, Mo., Wyo., Wash.

Rhopalidium cercosporelloides Dearn., leaf-spot. Idaho.

Septoria salicifolia (Trel.) Ell. and Ev., leaf-spot. Wis., Kans.

Sphaerotheca humuli (DC.) Burr., powdery mildew. Conn., N. Y.

STAPHYLEA.

S. trifolia, American bladdernut.

Ramularia isarioides Sacc., leaf-spot. Pa., Wis., Mo.

Septoria cirrhosa Wint., leaf-spot. Mo.

STIZOLOBIUM.

S. deeringianum, velvetbean.

Aplanobacter stizobii Wolf, bacterial leaf-spot. N. C.

Bacterium vignae M. W. Gardner and J. B. Kendrick, bacterial spot. Ind.

Cercospora mucunae Syd., leaf-spot. Ala.

C. stizobii Syd., leaf-spot. N. C., S. C., Fla.

Corticium vagum Berk. and Curt., stem-rot. Ga., La.

Heterodera radicum (Greef) Muell., root-knot. Calif.

Phyllosticta mucunae Ell. and Ev., leaf-spot. Ala.

Sclerotium rolfsii Sacc., stem-rot. Ga., Ala.

SYMPHORICARPOS.

Symphoricarpos sp., snowberry, coralberry.

Cercospora symphoricarpi Ell. and Ev., leaf-spot. Nebr., Kans., Mont.

Fomes ribis (Schum.) Fr., root-rot. N. Dak., Kans.

Microsphaera diffusa Cke. and Pk., powdery mildew. General.

Nectria coryli Fckl., canker. N. Dak.

Puccinia abundans (Pk.) Jack., rust. Great Plains and westward.

P. symphoricarpi Hark., rust. Western States.

Septoria oedospora F. E. Clements, leaf-spot. Colo.

S. symphoricarpi Ell. and Ev., leaf-spot. N. Dak., Nebr., Mont., Idaho, Wash.

SYRINGA.

Syringa sp., lilac.

Hymenochaete agglutinans Ell., stem girdling. Conn.

S. persica, Persian lilac.

Cercospora lilacis (Desm.) Sacc., leaf-spot. Miss.

Microsphaera alni (Wallr.) Wint., powdery mildew. Iowa.

SYRINGA—Continued.

S. vulgaris, lilac.

Botrytis cinerea Auct., blossom blight. Wash.

Cercospora lilacis (Desm.) Sacc., leaf-spot. S. C., Miss., Minn.

C. macromaculans Heald and Wolf, leaf-spot. Tex., Okla.

Corticium stevensii Burt (*Hypochnus ochroleucus* F. Noack), leaf-blight. N. C., Miss.

Microsphaera alni (Wallr.) Wint., powdery mildew. General.

Phyllosticta halstedii Ell. and Ev., leaf-spot. N. J.

P. syringae West., leaf-spot. Wis.

Polystictus versicolor (L.) Fr., yellowish wood-rot. Mo.

Sphaeropsis sp. Pa.

Uncinula clintonii Pk., powdery mildew. Ind.

TAGETES.

Tagetes sp., marigold.

Botrytis cinerea Auct., rot. Conn.

TAXODIUM.

T. distichum, baldcypress.

Fomes geotropus Cke., pecky heartwood rot. Southern States.

Pestalozzia funerea Desm., leaf-blight. Tex.

THUJA.

T. occidentalis, arborvitae.

Keithia thujina E. J. Durand, leaf-blight. Va., Wis.

Lophodermium pinastri (Schrad.) Chev., leaf-cast. Me.

Pestalozzia funerea Desm., leaf-blight. Me., Mass., Va., N. C.

Phomopsis juniperovora G. Hahn, nursery blight. Pa.

T. orientalis, oriental arborvitae.

Diplodia sp., die-back. Fla.

Phomopsis juniperovora G. Hahn, nursery blight. Pa., Ind., Ill., Iowa, Nebr., Kans.

T. plicata, giant arborvitae.

Armillaria mellea (Vahl) Quel., root-rot.

Coryneum thujinum Dearn., leaf-blight. Oreg.

Herpotrichia nigra Hartig, matting. Idaho.

Keithia thujina E. J. Durand, leaf-blight. Pacific Northwest.

Mycosphaerella thujae Petr., leaf-spot. Idaho.

Polyporus schweinitzii Fr., red-brown butt-rot. Idaho.

Poria weirii Murr., brown laminated rot. Throughout range of host.

Trametes pini (Brot.) Fr. (*Fomes pini* (Thore) Karst.), honeycomb rot.

TILIA.

Tilia sp., linden, basswood.

Actinonema tiliae Allesch., leaf-spot. Ind.

Cercospora microsora Sacc., leaf-blight. Widespread east of Great Plains.

C. tiliae Pk., leaf-spot. N. Y.

Gloeosporium tiliae Oud., anthracnose. N. Y., Mass., Va., Minn.

Hydnum septentrionale Fr., white sapwood rot. Ala.

Melanconium tiliae Pk., twig-blight. Ohio.

Phoradendron flavescens (Pursh) Nutt., mistletoe.

Phyllosticta tiliae Sacc. and Speg., leaf-spot. N. Y., Pa., W. Va.

Uncinula clintonii Pk., powdery mildew. Widespread in Eastern States.

TRAGOPOGON.

T. porrifolius, vegetable-oyster, salsify.

Albugo tragopogonis (DC.) S. F. Gray, white-rust. General in northern half of United States.

Bacillus carotovorus L. R. Jones (*Erwinia carotovora* (Jones) Com. S. A. B.), soft-rot. Conn.

Corticium vagum Berk. and Curt., stem-rot. Wash.

Erysiphe cichoracearum DC., powdery mildew. Nebr., Wash.

Heterodera radicolica (Greef) Muell., root-knot. Va., Ala., Wash.

Ozonium omnivorum Shear (*Phymatotrichum omnivorum* (Shear) Dug.), root-rot. Tex.

TRAGOPOGON—Continued.

T. porrifolius, vegetable-oyster, salsify—Continued.

Sclerotinia intermedia G. B. Ramsey, root-rot. Ill.

Verticillium sp., wilt. N. Y.

TRIFOLIUM.

T. hybridum, alsike clover.

Bacillus lathyri Manns and Taub., streak. Del.

Bacterium trifoliorum L. R. Jones et al., bacterial leaf-spot. General in Eastern States.

Cercospora zebrina Pass., leaf-spot. Va., Ind.

Colletotrichum trifolii S. M. Bain, anthracnose. East of Great Plains; Colo., Wash.

Corticium vagum Berk. and Curt., root-rot. Ohio, Minn.

Erysiphe polygoni DC., powdery mildew. W. Va., Minn., Idaho.

Phyllachora trifolii (Pers.) Fekl., sooty spot. Minn.

Sclerotinia trifoliorum Eriks., root-rot. Mich.

Sphaerulina trifolii Rostr., leaf-spot. N. Y., Ill., Mo.

Thielavia basicola (Berk. and Br.) Zopf, black root-rot.

Uromyces trifolii (Hedw. f.) Lév., rust. General.

Mosaic, undet. Pa.

T. incarnatum, crimson clover.

Bacterium trifoliorum L. R. Jones et al., leaf-spot. Md., Va., N. C., Ind., Wis., Iowa.

Botrytis sp., gray-mold. Del.

Cercospora medicaginis Ell. and Ev., leaf-spot. Del.

Colletotrichum trifolii S. M. Bain, anthracnose. Ky.

Corticium vagum Berk. and Curt., root-rot. N. C.

Gloeosporium caulivorum L. Kirchner, anthracnose. N. C.

Heterodera radiculicola (Greef) Muell., root-knot.

Macrosporium sp., leaf-spot. Va.

Phyllachora trifolii (Pers.) Fekl., sooty spot. Pa., Md., Ga., Ala., N. Dak.

Sclerotinia trifoliorum Eriks., root-rot. N. J., Md., N. C., S. C., Ky., Tenn., Oreg.

Sclerotium rolfsii Sacc., stem-rot. La.

Sphaerulina trifolii Rostr., leaf-spot. N. Y., Ill., Mo.

Thielavia basicola (Berk. and Br.) Zopf, black root-rot.

Uromyces fallens (Desm.) Kern, rust. Del., Ind., S. Dak.

U. trifolii (Hedw. f.) Lév., rust. Pa., Ala., Wis., Minn.

Mosaic, undet. Pa.

**T. medium*, zigzag clover.

Bacterium trifoliorum L. R. Jones et al., leaf-spot. Md., Va., N. C., Ind., Wis., Iowa.

Uromyces trifolii (Hedw. f.) Lév., rust.

T. pratense, red clover (includes **T. medium perenne*, mammoth clover).

Bacillus lathyri Manns and Taub., streak. Del.

Bacterium trifoliorum L. R. Jones et al., leaf-spot. D. C., Md., Va., N. C., Ind., Wis., Iowa.

Botrytis sp., gray-mold. Pa.

Cercospora medicaginis Ell. and Ev., leaf-spot. N. J.

C. zebrina Pass., leaf-spot. N. Y., Mich., Ind., Iowa.

Colletotrichum destructivum P. J. O'Gara, anthracnose. Utah.

C. trifolii S. M. Bain, anthracnose. N. Y., Pa., N. J., Del., Va., Ohio, Ind., Mich., Wis., Ky., Tenn.

Cuscuta spp., dodder. N. Y., Del., Md., La., Ohio, Nebr.

Erysiphe polygoni DC., powdery mildew. Widespread, especially abundant east of Great Plains.

Gloeosporium caulivorum L. Kirchner, anthracnose. N. Y. to Va., westward to Mo.

Heterodera radiculicola (Greef) Muell., root-knot. W. Va., La., Utah.

Macrosporium sarcinaeforme Cav., leaf-spot. East of Great Plains.

Phyllachora trifolii (Pers.) Fekl., sooty spot. East of Great Plains; Wash., Oreg.

Pseudopeziza trifolii (Biv.) Fekl., leaf-spot. Widespread in Northern States.

TRIFOLIUM—Continued.

T. pratense, red clover, etc.—Continued.

Sclerotinia trifoliorum Eriks., root-rot. Pa., N. C., Ky., Tenn., La., Ind., Mich., Oreg.

Septoria trifolii Ell., leaf-spot. N. J.

Sphaerulina trifolii Rostr., leaf-spot. N. Y., Ill., Mo.

Thielavia basicola (Berk. and Br.) Zopf, black root-rot.

Tylenchus dipsaci (Kuehn) Bast., stem nematode. Utah, Pacific Northwest.

Uromyces fallens (Desm.) Kern, rust. General.

Mosaic, undet. Conn., Pa., Ark., Ind., Minn.

T. repens, white clover.

Bacterium trifoliorum L. R. Jones et al., leaf-spot. D. C., Md., Va., N. C., Ind., Wis., Iowa.

Brachysporium trifolii C. H. Kauffman, blight. D. C.

Cercospora helwola Sacc., leaf-spot. N. J.

Corticium vagum Berk. and Curt., stem-rot. N. Y.

Erysiphe polygoni DC., powdery mildew. W. Va., Idaho.

Heterodera radicolica (Greef) Muell., root-knot.

Peronospora trifoliorum D By., downy mildew. Nebr.

Phyllachora trifolii (Pers.) Fekl., sooty spot. East of Great Plains; Utah.

Pseudopeziza trifolii (Biv.) Fekl., leaf-spot. Miss.

Sclerotinia trifoliorum Eriks., root-rot. Miss., Oreg.

Sphaerulina trifolii Rostr., leaf-spot. N. Y., N. J., Ill., Mo.

Thielavia basicola (Berk. and Br.) Zopf, black root-rot. Conn.

Uromyces nerviphila (Grognot) Lagh., rust. N. Y., Wis., Colo.

U. trifolii (Hedw. f.) Lév., rust. General.

TRITICUM.

T. aestivum, wheat.

Bacterium atrofaciens McC. (*Phytomonas atrofaciens* (McC.) Com. S. A. B.), basal glume-rot. General in States between Miss. River and Rocky Mts.; Mich., N. Y., Pa.

B. translucens undulosum EFS., L. R. Jones, and C. S. Reddy, black-chaff. Miss. Valley; Great Plains area; Mont., Idaho.

Claviceps purpurea (Fr.) Tul., ergot. Occurs scatteringly, especially on durum wheat.

Colletotrichum graminicolum (Ces.) Wils., anthracnose. East of Great Plains.

Erysiphe graminis DC., powdery mildew. General.

Fusarium culmorum leteius Sherb., seedling blight. Oreg.

Gibberella saubinetii (Mont.) Sacc., scab. General east of Great Plains; most prevalent in Corn Belt.

Helminthosporium sativum Pam., King, and Bak., foot-rot. Widely distributed, especially in upper Miss. Valley States.

Leptosphaeria tritici (S. Garovaglio) Pass., leaf-spot. N. Y., Iowa, Nebr.

Marasmius tritici P. A. Young, root-rot. Ill.

Mycosphaerella tulasnei Jacz. (*Cladosporium herbarum* (Pers.) Lk.; *Hormodendrum cladosporioides* Sacc.), sooty mold. N. Y., N. J., W. Va., Ohio, Mich., Pacific coast.

Ophiobolus graminis Sacc., take-all. N. Y., Md., Va., N. C., Tenn., Ark., Ind., Kans., Wash., Oreg., Calif.

Podosporiella verticillata P. J. O'Gara, seedling blight. Utah.

Puccinia glumarum (Schm.) Eriks. and Henn., stripe-rust. West of Great Plains.

P. graminis Pers., stem-rust. General; most prevalent in the spring-wheat area.

P. triticina Eriks., leaf-rust. General, especially prevalent in South.

Sclerospora macrospora Sacc., downy mildew. Del., Ky., Tenn., Calif.

Sclerotium rhizodes Auer., Sclerotium blight. Idaho, Mont., Wash.

Septoria nodorum Berk., glume-blotch. General; most prevalent in South and Ohio Valley States.

S. tritici Desm., speckled leaf-blotch. General.

Tilletia laevis Kuehn, bunt. General.

T. tritici (Bjerk.) Wint., bunt. Mostly west of Miss. River. Serious in Pacific Northwest.

TRITICUM—Continued.

T. aestivum, wheat—Continued.

Tylenchus tritici (Stein.) Bast., nematode. N. Y., Va., W. Va., N. C., S. C., Ga., Calif.

Urocystis tritici Koern., flag-smut. Ill., Mo., Kans.

Ustilago tritici (Pers.) Rostr., loose-smut. Widespread.

Wojnowicia graminis (McAlp.) Sacc. and D. Sacc., foot-rot. N. Y., Kans., Ark., Oreg.

Black-point, associated with *Helminthosporium* spp. N. Dak.

Mosaic, undet. Nebr., Ind., Ill.

Rosette, undet. Ill., Ind.

Sterility, undet. Minn., N. Dak., Kans., Mo., Tex.

Stripe, undet. N. Y., Pa., Ill.

**T. dicoccum*, emmer.

Ophiobolus graminis Sacc., take-all. N. Y.

Puccinia glumarum (Schm.) Eriks. and Henn., stripe-rust. Idaho.

P. graminis Pers., stem-rust. Tex., Okla., Mo., Wash.

P. triticina Eriks., leaf-rust. Ga., Tex.

Septoria nodorum Berk., glume-blotch. Md.

Tilletia tritici (Bjerk.) Wint., bunt. N. Dak.

Tylenchus tritici (Stein.) Bast., nematode. Va.

**T. spelta*, spelt.

Colletotrichum graminicolum (Ces.) Wils., anthracnose. Ill.

Gibberella saubinetii (Mont.) Sacc., scab. Md., Ill., Minn.

Ophiobolus graminis Sacc., take-all. N. Y.

Puccinia glumarum (Schm.) Eriks. and Henn., stripe-rust. Idaho.

P. graminis Pers., stem-rust. Mo., Minn., N. Dak., Kans., Wyo., Wash.

P. triticina Eriks., leaf-rust. Wis., Minn., Tex.

Tilletia tritici (Bjerk.) Wint., bunt. N. Dak.

Tylenchus tritici (Stein.) Bast., nematode. Va.

Ustilago tritici (Pers.) Rostr., loose-smut. N. Y.

TROPAEOLUM.

T. majus, nasturtium.

Alternaria sp. (associated with Pleospora), black-mold. N. J.

Bacterium aptatum N. Brown and Jamieson (*Phytomonas aptatum* (Brown and Jamieson) Com. S. A. B.), leaf-spot. N. J., Miss.

B. solanacearum EFS. (*Phytomonas solanaceara* (EFS.) Com. S. A. B.), bacterial wilt. Md., Va., Fla.

Cercospora tropaeoli Atk., leaf-spot. Ala.

Heterodera radicularis (Greef) Muell., root-knot. N. J.

Pleospora tropaeoli Hals., leaf-spot. Ohio.

Puccinia sarcobati (Pk.) Bethel, rust. Utah (a single report).

TSUGA.

T. canadensis, Canada hemlock.

Armillaria mellea (Vahl) Quel., root-rot. Pa.

Fomes pinicola Fr., brown crumbly rot. General in Northeastern States.

F. roseus (Alb. and Schw.) Fr., brown pocket rot. N. Y.

Hymenochaete agglutinans Ell. Pa.

Hypoderma brachysporum (Rostr.) Tub., leaf-cast. Vt.

Keithia tsugae (Farl.) E. J. Durand, leaf-blight. N. H., Wis.

Melampsora abietis-canadensis (Farl.) C. A. Ludwig, rust. New England; N. Y., and westward to northern Wis.

M. farlowii (Arth.) Davis, rust. New England.

Polyporus borealis Fr., cuboidal rot. N. Y.

Pucciniastrum hydrangeae (Berk. and Curt.) Arth., rust. Va.

P. myrtilli (Schum.) Arth., rust. New England, N. Y., Pa., Va., W. Va., N. C., Ind.

Trametes pini (Brot.) Fr. (*Fomes pini* (Thore) Karst.), honeycomb rot.

T. heterophylla, western hemlock.

Botrytis sp., seedling twig-blight. Idaho.

Caecoma dubium C. A. Ludwig, rust. Wash., Oreg.

Dimerosporium tsugae Dearn., sooty mold. Wash., Oreg.

TSUGA—Continued.

T. heterophylla, western hemlock—Continued.

Echinodontium tinctorium Ell. and Ev., brown stringy rot. Mont., Idaho, Oreg.

Fomes annosus Fr., white spongy rot. Wash.

F. officinalis Fr., reddish brown-rot.

F. pinicola Fr., brown crumbly rot. General with host.

Polyporus dryadeus (Pers.) Fr., white root-rot. Pacific Northwest.

P. schweinitzii Fr., red-brown butt-rot. Oreg.

P. sulphureus (Bull.) Fr., brown-checked wood-rot.

Razoumofskyia tsugensis C. O. Rosendahl, hemlock mistletoe. Pacific Northwest; Alaska.

Rhizina inflata (Schaeff.) Sacc., seedling blight. Idaho.

Trametes pini (Brot.) Fr. (*Fomes pini* (Thore) Karst.), honeycomb rot. Wash.

Uredo holwayi Arth., needle rust. Mont., Idaho.

T. mertensiana, mountain hemlock.

Echinodontium tinctorium Ell. and Ev., brown stringy rot. Wash.

Fomes officinalis Fr., brown heartwood rot. Idaho.

F. pinicola Fr., brown crumbly rot. General with host.

Herpotrichia nigra Hartig, matting. Oreg.

Polyporus schweinitzii Fr., red-brown butt-rot.

Pythium debaryanum Hesse, damping-off.

Razoumofskyia tsugensis C. O. Rosendahl, mistletoe. Idaho, Wash.

Trametes pini (Brot.) Fr. (*Fomes pini* (Thore) Karst.), honeycomb rot. Oreg.

TULIPA.

Tulipa sp., tulip.

Botrytis tulipae (Lib.) E. F. Hopkins, botrytis blight. General.

Rhizoctonia tuliparum (Kleb.) Whet. and John M. Arthur, gray bulb-rot. N. Y.

Sclerotinia sp., white-rot. Ohio.

ULMUS.

Ulmus spp., elms.

Cercospora sphaeriaeformis Cke., leaf-spot. La.

Coinothyrium ulmi Tharp. Tex.

Cylindrosporium tenuisporum Heald and Wolf, leaf-spot. Tex.

Fomes applanatus (Pers.) Wallr. (*Ganoderma applanatum* (Pers.) Pat.), white-streaked rot. Northeastern States.

F. igniarius (L.) Fr., white heart-rot. Northeastern States.

Gloeosporium inconspicuum Cav., leaf-spot. Mass., Ohio, Mich., Minn., Okla.

Gnomonia ulmea (Sacc.) Thuem., black-spot. General east of Great Plains.

Heterodera radicola (Greef) Muell., root-knot. Calif.

Microsphaera alni (Wallr.) Wint., powdery mildew. Ill., Iowa.

Mycosphaerella ulmi Kleb., leaf-spot. East of Great Plains.

Nectria cinnabarina (Tode) Fr., canker. Ohio.

Ozonium omnivorum Shear (*Phymatotrichum omnivorum* (Shear) Dug.), root-rot. Tex., Ariz.

Phoradendron flavescens (Pursh) Nutt., mistletoe. Ind., Southwest.

Phyllactinia corylea (Pers.) Karst., powdery mildew. S. C., Ala., Miss., Tex., Ill.

Phyllosticta confertissima Ell. and Ev., leaf-spot. Pa., Kans.

P. erratica Ell. and Ev., leaf-spot. Ala.

P. melaleuca Ell. and Ev., leaf-spot. Ala., Miss., Okla., Mich., Iowa, Mo., Nebr.

Pleurotus ulmarius Bull., white sap-rot. Widespread east of Great Plains.

Poronidulus conchifer (Schw.) Murr., twig-blight. Ohio.

Sphaeropsis ulmicola Ell. and Ev., canker. Pa., Md., Ohio, Wis.

Taphrina ulmi (Fekl.) Johans., leaf blister. Mass.

Uncinula macrospora Pk., powdery mildew. General east of Great Plains.

VACCINIUM.

Vaccinium spp., blueberry.

Bacterium tumefaciens EFS. and Town. (*Phytophthora tumefaciens* (EFS. and Town.) Com. S. A. B.), crown-gall. Miss.

Calyptospora columnaris (Alb. and Schw.) Kuehn, stem-rust. Frequent in the Northern States and Pacific coast.

Exobasidium vaccinii (Fckl.) Wor., red leaf-spot. General.

Microsphaera alni vaccinii (Schw.) Salm., powdery mildew. North Atlantic States; Ohio, Ill., Wash.

Pucciniastrum myrtilli (Schum.) Arth., leaf-rust. General, especially in Northern States.

Ramularia effusa Pk., leaf-spot. Wis.

Rhytisma vaccinii (Schw.) Fr., tar-spot. Widespread.

Sclerotinia vaccinii-corymbosi J. M. Reade, fruit-rot, twig-blight. North Atlantic States; Ind., Mich.

Septoria albopunctata Cke., leaf-spot. S. C.

S. difformis Cke. and Pk., leaf-spot. N. Y.

Venturia compacta Pk. Me., Mass., La., Wis.

V. macrocarpon, cranberry.

Acanthorhynchus vaccinii Shear, blotch-rot. Me., Mass., N. J., W. Va., N. C., Mich., Wis., Wash.

Botrytis cinerea Auct., gray-mold rot. Wash.

Ceuthospora lunata Shear, black-rot. Mass., N. J., Wash.

Exobasidium oxycocci Rostr., rose-bloom. Mass., Wash., Oreg.

E. vaccinii (Fckl.) Wor., red leaf-spot. Atlantic Coast States; W. Va., Wis., Minn., Wash.

Fusicoccum putrefaciens Shear, end-rot. Me., Mass., N. J., N. C., Mich., Wis., Wash., Oreg.

Glomerella cingulata vaccinii Shear, bitter-rot. Mass., N. J., N. C., Wis., Wash., Oreg.

Guignardia vaccinii Shear, early-rot. Mass., Conn., N. Y., N. J., Va., N. C., Wis., Wash.

Leptothyrium oxycocci Shear. Mass.

Microsphaera alni vaccinii (Schw.) Salm., powdery mildew. N. J., Ohio.

Phomopsis sp., fruit-rot. Wash.

Phyllosticta putrefaciens Shear, rot. N. J.

Pucciniastrum myrtilli (Schum.) Arth., rust. Wash.

Sclerotinia oxycocci Wor., hard-rot and tip-blight. Wis., Wash.

Synchytrium vaccinii F. Thomas, red-gall. N. J.

Venturia compacta Pk. Me., Mass., N. Y., N. J., Wis., Wash.

False-blossom, undet. Mass., N. J., Wis., Wash., Oreg.

VIBURNUM.

Viburnum spp., viburnum.

Botrytis sp., blight. Wash.

Cercospora varia Pk., leaf-spot. Mass., N. Y., Ind., Ill., Iowa, Colo.

Coleosporium viburni Arth., rust. Md., Wis., Iowa.

Corticium stevensii Burt (*Hypochnus ochroleucus* F. Noack), leaf-blight. N. C.

Helminthosporium beaumonti Sacc., leaf-spot. Ala.

Hendersonia foliorum Fckl., leaf-spot. Tex.

Hymenochaete agglutinans Ell. Pa.

Microsphaera alni (Wallr.) Wint., powdery mildew. Widespread.

Phyllosticta lantanoidis Pk., leaf-spot. N. Y.

P. punctata Ell. and Dearn., leaf-spot. Wis.

P. tineola Sacc., leaf-spot. Wis.

Plasmopara viburni Pk., downy mildew. N. Y., W. Va., Ga., Ala., Minn.

Puccinia linkii J. F. Klotzsch, rust. Mich., Idaho, Mont., Wash.

VICIA.

V. faba, broadbean.

Ascochyta pisi Lib. (*Mycosphaerella pinodes* (Berk. and Blox.) R. E. Stone), leaf-spot. Calif.

Corticium vagum Berk. and Curt., stem-rot. Mich., Wash.

Fusarium culmorum W. G. Smith, root-rot. Utah.

F. trichothecioides Woll., root-rot. Utah.

Heterodera radicola (Greef) Muell., root-knot. Calif.

Uromyces fabae (Pers.) D By., rust. Ala., La.

VICIA—Continued.

V. sativa, common vetch.

Ascochyta pisi Lib. (*Mycosphaerella pinodes* (Berk. and Blox.) R. E. Stone), leaf-spot. Miss.

Cercospora viciae Ell. and Holw., leaf-spot. Iowa, Kans.

Peronospora viciae D By., downy mildew. Va., Miss.

V. villosa, hairy vetch, winter vetch.

Ascochyta pisi Lib. (*Mycosphaerella pinodes* (Berk. and Blox.) R. E. Stone), leaf-spot. Occurs scatteringly in widely separated States.

Heterodera radiculicola (Greef) Muell., root-knot. Calif.

Pseudopeziza medicaginis (Lib.) Sacc., leaf-spot. Miss.

Sclerotinia sp. Calif.

VIGNA.

V. catjang, catjang-pea.

Cercospora vignae Ell. and Ev., leaf-spot. Del., Fla., Tenn., La., Ark.

Fusarium vasinfectum tracheiphilum EFS., wilt. Widespread in Southern States.

Heterodera radiculicola (Greef) Muell., root-knot.

V. sinensis, cowpea.

Amerosporium oeconomicum Ell. and Tr., leaf-spot. Southern States; Del., Conn.

Bacillus lathyri Manns and Taub., streak. Del.

Bacterium phaseoli EFS. (*Phytomonas phaseoli* (EFS.) Com. S. A. B.), bacterial blight. Okla.

B. vignae M. W. Gardner and J. B. Kendrick (*Phytomonas vignae* (Gardner, and Kendrick) Com. S. A. B.), bacterial spot. Ind., Kans.

Cercospora cruenta Sacc., leaf-spot. General east of Great Plains, especially in South.

C. dolichii Ell. and Ev., leaf-spot. Conn., N. J., Ala., Miss.

*C. vignae*³ M. Raciborski, leaf-spot. Tex.

Cladosporium vignae M. W. Gardner, leaf-spot. Ind.

Colletotrichum lindemuthianum (Sacc. and Magn.) Briosi and Cav. (*Glomerella lindemuthiana* Shear), anthracnose. Del., Fla.

Corticium vagum Berk. and Curt., stem-rot. Southern States.

Erysiphe polygoni DC., powdery mildew. Southern States.

Fusarium martii phaseoli Burk., root-rot.

F. vasinfectum tracheiphilum EFS., wilt. Southern States; Ind., Kans., Calif.

Heterodera radiculicola (Greef) Muell., root-knot. Southern States.

Microsphaera alni (Wallr.) Wint., powdery mildew. Ga.

M. euphorbiae Berk. and Curt., powdery mildew. S. C., Fla.

Ozonium omnivorum Shear (*Phymatotrichum omnivorum* (Shear) Dug.), root-rot. Okla., Tex.

Phyllosticta phaseolina Sacc., leaf-spot. Del., Va., N. C., S. C., Ind., Ill., Mich.

Sclerotium rolfsii Sacc., stem-rot. N. C.

Thielavia basicola (Berk. and Br.) Zopf, black root-rot. Md., D. C.

Uromyces vignae A. Barclay, rust. Md., Va., Fla., Ala., Tex., Ind., Iowa, Mo., Calif.

Mosaic, undet. Ark., Okla., Ind.

VIOLA.

V. odorata, sweet violet.

Alternaria violae Gall. and P. H. Dorsett, leaf-spot. Conn., Tex.

Cercospora violae Sacc., leaf-spot. Conn., Pa., Ala., Tex.

Colletotrichum violae-tricoloris R. E. Smith, leaf-spot. Conn.

Corticium vagum Berk. and Curt., stem-rot. N. Y.

Gloeosporium violae Berk. and Br., leaf-spot. Miss.

Heterodera radiculicola (Greef) Muell., root-knot.

Phyllosticta violae Desm., leaf-spot. Conn., Mass.

Sclerotium rolfsii Sacc., stem-rot. Md.

Thielavia basicola (Berk. and Br.) Zopf, black root-rot. Mass., Conn., N. Y., Md., D. C.

³ *Cercospora vignae* Rac. was described from Java in 1898; *Cercospora vignae* Ell. and Ev. from Louisiana in 1886. Heald and Wolf reported *C. vignae* Rac. from Texas in 1912.

VIOLA—Continued.

V. tricolor and *V. cornuta*, pansy.

Alternaria violae Gall. and P. H. Dorsett, leaf-spot. N. Y., Pa.

Cercospora violae Sacc., leaf-spot. N. Y.

Colletotrichum sp., anthracnose. Fla.

C. violae-tricoloris R. E. Smith, leaf-spot. Mass., N. Y., N. J.

Corticium vagum Berk. and Curt., root-rot. Del., Minn.

Fusarium sp., wilt. Ohio, Mich.

F. violae Wolf, stem-rot, root-rot. Nebr.

Heterodera radicum (Greef) Muell., root-knot. N. Y.

Peronospora violae D By., downy mildew. Miss., Ill., Nebr.

Puccinia ellisiana Thuem., rust. Kans., Nebr.

P. violae (Schum.) DC., rust. S. C., N. Dak.

Pythium debaryanum Hesse, damping-off. Conn.

Ramularia sp., leaf-spot. Wash.

Sphaerotheca humuli fuliginea (Schl.) Salm., powdery mildew. Wash.

Thielavia basicola (Berk. and Br.) Zopf, black root-rot. Conn.

VITIS.

Vitis sp., grape.

Armillaria mellea (Vahl) Quel., root-rot. Wash.

Bacterium tumefaciens EFS. and Town. (*Phytoplasma tumefaciens* (EFS. and Town.) Com. S. A. B.), crown-gall. General.

Botrytis cinerea Auct., gray-mold rot. General on fruit.

Clitocybe monadelphæ (Morgan) Sacc., root-rot. Mo., Ark., Okla., Tex.

Cryptosporella viticola (Reddick) Shear, dead-arm. General east of Great Plains.

Glomerella cingulata (Ston.) Spauld. and Schrenk, ripe-rot. Widespread east of Miss. River.

Guignardia bidwellii (Ell.) Viala and Ravaz, black-rot. General east of Great Plains.

Heterodera radicum (Greef) Muell., root-knot. Calif.

Isariopsis clavisporea (Berk. and Curt.) Sacc. (*Cercospora viticola* (Ces.) Sacc.), leaf-spot. Southern States; Mich.

Melanconium fuligineum (Scrib. and Viala) Cav., bitter-rot. Widespread east of Great Plains, especially South.

Ozonium omnivorum Shear (*Phymatotrichum omnivorum* (Shear) Dug.), root-rot. Tex.

Pestalozzia unicola Speg., leaf-blight. Fla., Miss., Tenn., Ohio, Ind., Nebr.

Phakopsora vitis (Thuem.) Syd., rust. S. C., Fla.

Plasmopara viticola (Berk. and Curt.) Berl. and DeToni, downy mildew. General east of Great Plains; Calif.

Rhytisma vitis Schw., tar-spot. N. Y., Pa.

Roesleria hypogaea Thuem. and Pass., root-rot. N. Y., Pa., Ohio, Ill., Mo., N. Mex.

Septoria ampelina Berk. and Curt., leaf-spot. N. Y., Va., Tex., Kans.

Sphaceloma ampelinum D By. (*Gloeosporium ampelophagum* (Pass.) Sacc.), anthracnose. General but erratic east of Great Plains.

Uncinula necator (Schw.) Burr., powdery mildew. General.

California vine disease, undet. Calif.

Chlorosis. Eastern States.

Little-leaf, undet. Calif.

Spanish measles, undet. Calif.

WISTERIA.

Wisteria sp., wisteria.

Phyllosticta wistariae Sacc., leaf-spot. N. J., Tex.

Septoria wistariae Tharp, leaf-spot. Tex.

YUCCA.

Y. filamentosa, common yucca.

Cercospora concentrica Cke. and Ell., leaf-spot. N. J.

Coniothyrium concentricum (Desm.) Sacc., leaf-spot. Ala., N. Y., Idaho.

Gloeosporium yuccaegenum Ell. and Ev., leaf-spot. Mo.

Leptosphaeria filamentosa Ell. and Ev., leaf-spot. N. J.

ZEA.

Z. mays, maize, Indian corn.

- Aplanobacter stewartii* (EFS.) McC. (*Phytophthora stewartii* (EFS.) Com. S. A. B.), bacterial wilt. General east of Great Plains; Southwest; especially on certain varieties of sweet corn.
- Aspergillus* sp., ear-mold. La., Tex., Calif.
- Bacterium dissolvens* H. R. Rosen, bacterial root-rot. Miss., La., Ark., Ill.
- Basisporium gallarum* M. Molliard (*Coniosporium gecevi* Bub.), cob-rot. Conn., Ohio, Iowa, Kans.
- Cephalosporium acremonium* Cda., black bundle. East of Great Plains, Calif.
- Cercospora sorghi* Ell. and Ev., leaf-spot. S. C., Ala., La.
- Colletotrichum graminicolum* (Ces.) Wils., anthracnose. Conn., N. J., S. C., W. Va.
- Diplodia zeae* Lévy., dry-rot. General where corn is grown.
- Fusarium culmorum leteius* Sherb., seedling blight. Oreg.
- F. moniliforme* Sheld., ear-rot and seed-rot. General.
- Gibberella saubinetii* (Mont.) Sacc., root-rot. General east of Great Plains.
- Helminthosporium* sp., stalk canker. Ga.
- H. turcicum* Pass., leaf-blight. General east of Great Plains.
- Heterodera radicola* (Greef) Muell., root-knot. S. C., Ala.
- Ophiobolus heterostrophus* Drechs., leaf-spot. Fla.
- Phyllosticta* sp., leaf-spot. Fla.
- Physoderma zeae-maydis* Shaw, brown-spot. N. J., Md. to Nebr. and south. Most important in South.
- Phytophthora cactorum* (Leb. and Cohn) Schroet., root-rot. Conn.
- Puccinia sorghi* Schw., rust. General, especially east of Rocky Mts.
- Pythium* sp., root-rot. Fla.
- Rhizoctonia* sp., root-rot. Ohio, Minn., Wash.
- Rhizopus nigricans* Ehr., seed-blight.
- Sclerospora graminicola* (Sacc.) Schroet., downy mildew. Iowa.
- Sclerotium rolfsii* Sacc., stem-rot. Fla., Ala., Tex.
- Sorosporium reilianum* (Kuehn) McAlp., head-smut. N. Y., Ohio, Kans., Idaho, Wash., Calif.
- Ustilago zeae* (Beckm.) Ung., smut. General.
- Mosaic, undet. Ga., Ark., La.
- Sheath-spot, Fusaria and other fungi. General.

ZINNIA.

Z. elegans, zinnia.

- Cercospora atricincta* Heald and Wolf, leaf-spot. Fla., Tex.
- C. zinniae* Ell. and Mart., leaf-spot. Fla., Ala.
- Choanephora* sp., blossom blight. Fla.
- Erysiphe cichoracearum* DC., powdery mildew. Conn., W. Va., Ill., Tex.
- Fusarium* sp., wilt. Wash.
- Paratylenchus nanus* Cobb, nematode. Md.

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April 1, 1926

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